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ABSTRACT

The monograph includes 11 papers presented at a 1984 conference on severe behavior disorders of children and youth. Papers deal with research, practice, and teacher training issues. The following titles and authors are represented: "Person-Environment Fit: A Unifying Concept for Special Education" (F. Hewett); "The Learning-to-Fail Phenomenon as an Obstacle to Mainstreaming Children with Behavioral Disorders" (R. Gable et al); "Early Intervention for Behaviorally Disordered Children: An Integrative Review" (M. Mastropieri et al); "Psychometric Characteristics of the SBS Student Inventory of Social Behavior Standards/Expectations and the SBS Correlates Checklist" (G. Horton et al); "Characteristics of Extended Programs for Autistic Students" (J. Hutton and B. Grissom); "Developing Counseling Skills in Teachers of Behaviorally Disordered Adolescents" (J. Maag and A. Meinhold); "Materials Selection and Adaptation: Strategies for Combating Curriculum Casualties among the Behaviorally Disordered" (R. Gable et al); "Academic and Intellectual Characteristics of Behaviorally Disordered Children and Youth" (M. Mastropieri et al); "Effects of Human Potential Seminars on the Socially Adaptive Behavior of Incarcerated Juvenile Delinquents" (M. Hamm); "Hair Mineral Content as a Predictor of Childhood Autism" (M. Marlowe and J. Errea); "The Role of Pupil Gender in Teacher Perception of Disturbance among Adolescents" (D. McGee). (CL)

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Severe Behavior Disorders of Children and Youth

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The Council for Children with Behavioral Disorders is a national professional organization for those interested in the education and well-being of behaviorally-disordered individuals. The Council functions to develop lines of communication and interaction among professionals, disciplines, and organizations, to promote adequate programs for recruitment training, and consultation, to encourage research and development to support legislation for services to these children. Toward this end, the Council publishes a quarterly journal, Behavioral Disorders, and sponsors national conferences in relation to these interests. An organization of some 5,200 members, the Council maintains central offices at 19200 Association Drive, Reston, Virginia 22091.

Monograph in Behavioral Disorders is a special publication issued by the Council for Children with Behavioral Disorders to augment the organization's quarterly journal, Behavioral Disorders. The Monograph is designed to treat topics in an intensive highly-focused manner not usually appropriate for standard journal presentation.

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Preface

Volume 8 of the *Monograph in Behavioral Disorders* series represents a collection of selected papers presented at the Eighth Annual ASU/TECBD Conference on Severe Behavior Disorders of Children and Youth held in Tempe, Arizona in November of 1984. These papers, which have been subjected to blind peer review by the Consulting Editors of *Behavioral Disorders*, deal with research, practice, and teacher training issues in the area of behavioral disorders.

Again, special thanks are offered to the Executive Committee of the Council for Children with Behavioral Disorders for their support of the *Monograph in Behavioral Disorders* series and to the Consulting Editors of *Behavioral Disorders* for their review of the papers submitted.

Robert R. Rutherford, Jr., Ph.D.
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Person-Environment Fit: A Unifying Concept for Special Education

Frank M. Hewett

As argued for centuries before, the relative contributions of heredity and environment in explaining individual differences will undoubtedly be argued well beyond the year 2000. In the 1790s when Victor, the Wild Boy of Aveyron who had been abandoned among animals, was brought to Itard, the French physician explained the boy's primitive and severely retarded behavior as being the result of a lack of environmental stimulation or sensory experience. Older and presumably wiser colleagues such as Pinel, the father of modern psychiatry, dismissed this explanation claiming the boy was obviously defective and had been from birth. These positions, differentially emphasizing the importance of the person as compared to the environment in explaining human behavior, remain with us today. In recent decades the evidence and the logic of a reciprocal relationship of person and environment in determining behavior has been increasingly recognized. Kurt Lewin (1951) expressed this as a formula — B = P,E — Behavior results from both the Person and the Environment.

Stress, the Person, and the Environment

During the past 20 years, social psychologists have attempted to understand the interaction between the person and the environment in relation to *stress* (Lazarus & Launier, 1979; Stokols, 1979). Stress is viewed as representing an imbalance within the person that occurs because of an actual or perceived disparity between environmental demands and the person's capacity to cope with these demands as manifested through a variety of physiological, emotional, and behavioral responses (Stokols, 1979). Conditions of the social and physical environment may operate as *stressors* to the extent they tax or exceed the person's adaptive resources (Lazarus, 1966; Selye, 1956). The relationships between the demands of the environment and the resources of the individual have been conceptualized as person-environment match or "fit" and have led to the formulation of person-environment (P-E) fit theory and efforts to develop a quantitative approach for describing adjustment and coping (French & Kahn, 1962; French, Rodgers, & Cobb, 1974; Harrison, 1978).

For purposes of discussion, we will use the model and concept of person-environment fit as developed by French and Harrison in their research on stress in the workplace. We shall extend the model to other settings in the environment — the school, the family, the peer group, and other institutional and community groupings — and in doing so develop an ecological orientation consistent with the writings of Hobbs (1966) in relation to the development and understanding of emotional disturbance. In the ecological approach the environment becomes the ecosystem, the sum total of the critical behavior settings in the person's life.

In addition, the ecosystem refers to the sum total of critical events and experiences in the person's life both past and present. Thus, the concept of the ecosystem is person-environment interactional. As conceived by French and Harrison, P-E fit theory has its roots in the motivational theories of Murray (1954) and Lewin (1951).

Objective P-E Fit

How often we have heard teachers exclain, "Johnny just doesn't seem to *fit* in my class!" or "Mary Ellen is in a group with others of similar age and ability, but she still doesn't *fit*." Parents may ponder the source of their son's or daughter's hyperactivity or lack of manners, neither of which *fits* with family tradition. Social organizations may review prospective members' qualifications and eliminate those who don't *fit* organization standards. Such formal selection of those who fit from those who do not fit may occur far less frequently than the continual informal selection that goes on within peer groups, particularly during adolescence. In addition, from the person's viewpoint, problems in fit may occur: "I attended the exercise class, but it's not set up to *fit* my needs" or "I interviewed for the job, but the boss's expectations don't *fit* in with my future plans."

According to the concept of P-E fit, persons *fit* their environments when their characteristics (e.g., attractiveness, behavior, abilities, needs) match up reasonably well with environmental expectations; and environments *fit* persons when the rewards or motivators available for meeting these expectations are in line with the person's needs and interests. Stress occurs when persons are in environments where there is a mismatch between expectations and person characteristics. There is also stress when the reinforcers available do not match up the person needs or when punishment is experienced as a result of failure to meet environmental expectations. Such stress may be tolerated for long periods of time, modified by changes in the person-environment relationship, or eventually leading to physical illness or emotional disturbance. What is described is a straight forward person-environment, environment-person set of relationships such as exists in the day-to-day real world. As illustrated in Figure 1, these can be referred to as *objective person* and *objective environment relationships*.

Using this concept of objective person-environment fit, one can readily see common problems facing exceptional individuals. The blind individual may be capable of living independently and holding a good job, very positive objective person characteristics. But, if the objective environment expects blind individuals to be helpless and to be serious risks to themselves and others, and excludes them from renting apartments or holding jobs with decent salaries, we have a very poor P-E fit. The child with a learning disability may be several years below grade level in reading, an unfortunate objective person characteristic. If the school in the objective environment makes no allowances for this problem in terms of expectations and creates continual punishing failure situations, a serious problem of fit occurs. Retarded individuals may display appropriate and outgoing social behaviors which are desirable objective person characteristics. But if the neighborhood and community in the objective environment view all retardates with suspicion because of certain physical attributes and reject them socially, we have a poor P-E fit. The disturbed adolescent whose shyness and fearfulness on the objective person level are ridiculed and rejected by a family that expects him/her to be outgoing and dominant in the objective environment also experiences a poor P-E fit.

Traditional Approaches in Special Education and P-E Fit

Historically, emotional disturbance or deviant behavior was primarily linked to the objective person. Later the relationship between the objective person and the objective environment became the focus. Possession by demons is the oldest explanation for disturbed behavior. Various physical abnormalities were sometimes also viewed as involved and bloodletting, dunking, and other "physical" therapies were utilized to purge the objective person. In the United States during the 1800s and well into this century disturbed behavior by schoolaged children was seen as a violation of societal norms, rules, and laws, and thus the objective environment was emphasized. It is not surprising that the first special class for disturbed school children was set up for "truant and unruly boys" (Hewett & Forness, 1984). Indeed, the American Educational Research Association Yearbook entries on disturbed behavior were entitled *social maladjustment* until 1960 (Hewett & Taylor, 1980).

Behavior Modification

In the 1960s special education was greatly influenced by an objective person-objective environment referenced approach called behavior modification. While for centuries the effectiveness of reward training or providing rewards for individual accomplishment in a general fashion had been recognized, behavior modification, drawing upon Skinnerian learning theory, carefully specified the

Figure 1. *The Objective Environment & Objective Person.*

Objective Environment

The person's ecosystem: family,
school, community, workplace, and
other behavior settings. What is
expected. What is available.
(e.g., reinforcers, punishment)

↓

Objective P-E Fit

How does the person's functioning
level and abilities, needs, etc.,
match up with want is expected and
what is available?

↑

Objective Person

The person's functioning level
(abilities, needs, motives,
characteristics)

conditions under which both rewards and punishments might be most powerful in shaping or changing an individual's behavior. The objective person was viewed as a behaver and little attention was paid to abilities, needs, motives, and characteristics associated with heredity. What was important was how the objective environment presented its expectations and the subsequent provision it made for reinforcement and punishment. When the objective person behaved as expected by the objective environment and was reinforced, we had P-E fit. Much has been written about the stress and often unpredictable outcomes associated with lack of P-E fit and resultant punishment (Wood & Lakin, 1983).

Contemporary Biophysical Approaches

Parallel to the application and development of behavior modification in special education was an increasing focus on the biophysical properties of the objective person. Deficits in visual and auditory perception, distractability, and poor motor coordination were identified and studied in individuals experiencing difficulty in learning to read and in developing other basic skills. In an effort to achieve better P-E fit between the academic demands of the objective environment (school) and the objective person's skill level, specific training exercises were developed based on the assumption that training in pre-academic skills such as visual perception would surely improve functioning on the more academic skill levels. Research results have not tended to report major P-E fit improvement in this regard. Concern with hyperactivity also prompted objective person interventions, many involving the use of drugs. In general, a majority of hyperactive children so treated appear to attain an improved level of P-E fit.

At the same time, individual differences in temperament began to receive the attention of Thomas, Chess, and Birch (1969). Although not clearly established as an inborn characteristic, temperamental differences between infants can be viewed in the early weeks of life. Some infants easily adapt to schedules and routines, others take longer periods of time, and some seem to never completely adapt. Activity levels, regularity of bodily functions, and adaptation to changes in environmental stimuli have all been found to vary as apparent reflections of temperament. The concept of P-E fit is very applicable when examining differences in objective environment expectations and temperamental characteristics of the objective person.

In discussing their longitudinal study of temperament, Murphy and Moriarty (1976) concluded that the fit between the temperaments of mother and child was a crucial determinant of the viability of the mother-child relationship. Keogh and Pullis (1980), however, note that the concept of fit in temperament between a mother and child should not be taken literally (i.e., implying a sameness or similarity of temperament for both mother and child). Rather, they stressed that the concept of fit should be viewed as referring to the sensitivity and appropriateness of maternal responses to the infant's expression of temperament. "It is not so much the match between temperament as it is the match between the style of the child and the values and expectations of the parent that is the critical factor for consequences" (p. 257).

Psychoanalytic Theory

Beginning with the work of August Aichhorn, psychoanalytic theory began to make its impact on the field of special education in 1915 (Aichhorn, 1965).

Aichhorn devised a treatment program for delinquent adolescents in Austria based on Freud's early writings. Aichhorn's motto was "As far as possible leave the boys alone" and his focus was on the objective person, removing the demands and expectations of the objective environment as much as possible. Aichhorn believed the objective environment (e.g., family, school) was responsible for the difficulties of his charges and that their lack of trust, overaggressiveness, and inner conflicts were the direct results of a lack of love and acceptance. They, as objective persons, had had the need for love but for whatever reason it had not been made available from the objective environment. They behaved as they did due to severe stress emanating from a poor P-E fit. Aichhorn's efforts resulted in much physical destructiveness and acting out on the part of the boys but after a time he reported improvement in what we might consider P-E fit.

Freudian theory focused heavily on the objective person and the unfolding of instinctual drives and stages of personality development during the early formative years. One of its three basic personality structures — the *id* — was firmly rooted in the objective person, while the other two — *ego* and *superego* — were viewed as having bridging functions with the objective environment. Indeed, the ego was the executor of efforts to bring about a P-E fit, while the superego complicated these efforts since it servedas a representative of the objective environment's prohibitions and moral values. The stress created by a poor P-E fit was often blamed more on the objective person than on the objective environment. Some of Freud's earliest and most influential followers (e.g., Jung, Adler, Rank) parted company with him over the issue of the relative influences of the objective person and objective environment in personality development.

Subjective P-E Fit

Discussion of poor P-E fit and stress due to a lack of trust, a lack of love, or inner conflicts introduces a level of consideration and discourse not adequately covered by the concepts of the objective environment and objective person. In defining stress, we spoke of a state of imbalance within the individual that is elicited by an actual or *perceived* disparity between demands of the environment and the individual's capacity to cope with these demands (Stokols, 1979). It is the *perceived disparity* that needs further attention with respect to P-E fit and indeed the P-E fit model expands to take this into account. For both the objective environment and the objective person there is a *subjective* counterpart. Stress may result from a "mismatch" between objective environment and objective person but ultimately the degree of stress experienced will depend on the person's perception and subjective interpretation of both the environment and themselves — the *subjective environment* and the *subjective person.*

We may assume that any child fitting the temperamental category of "difficult" would be universally disliked and negatively reacted to. Not so. Many mothers of children labeled by clinicians and others as "difficult" offer few if any complaints. Their subjective environment and person (e.g., their perception of their child and of themselves) is both favorable and satisfying. The author recalls talking with a family who had a 12-year-old son with Down's Syndrome. The family was strongly religious and their collective subjective environment toward the son was extremely favorable. They spoke of him as "Truly a gift from God" and considered each member of the family genuinely "blessed" because of his presence among them. The nature of both the son's and the family's P-E fit was thus very much affected by these perceptions.

Many people might take it for granted that a bright, inquiring student in a fifth grade class would be the joy of any teacher. Not always so. One teacher of such a class had just finished a lesson on early American history that underscored the villiany of Benedict Arnold. A gifted student raised his hand and challenged the teacher's conclusion stating according to his reading of several history books Benedict Arnold might have been as much of a patriot as a traitor. The teacher's subjective environment at the moment viewed this student as a "smart aleck" and troublemaker and she was both visibly shaken and very angry.

The relationship betwen the subjective environment and the subjective person is illustrated in Figure 2. Let us apply this new set of relationships between environment and person to the exceptional individuals discussed previously. We spoke of the capable blind individual denied appropriate housing and work, creating an objective environment-objective person misfit. Before this lack of fit would actually result in stress, there would have to be a lack of fit between the subjective environment and the subjective person. For, if what is expected and available from the environment were to be perceived as fitting with the level of competence or self-concept of the person, there need not necessarily be stress: "The environment offers me the living situation and job opportunity I deserve." However, if what the subjective environment was perceived to expect and to offer was not consistent with self-concept, we would have a lack of P-E fit: "The environment offers me a living situation and job opportunity which is insulting."

As before, the learning disabled individual through his subjective environment may view the expectations of the school as overwhelming and meaningless. He may adopt a subjective person attitude of "I can never learn and there is nothing I can do about it" thus striving for P-E fit and a reduction of stress. This attempt at achieving a P-E fit in school is common to many individuals with serious and persistent learning problems. However, if the individual views the

Figure 2. *The Subjective Environment and Subjective Person.*

Subjective Environment

The person's perception of each
unit of the ecosystem and of what
is expected and what is available.

↓

Subjective P-E Fit

How does the person's perception of
what's expected and what's available
match up with self-concept?

↑

Objective Person

The person's perception of his or
her functioning level and of abilities,
needs, etc. (self-concept).

grade of "F" as demeaning and unacceptable (to his view of himself), we have a poor P-E fit and resultant stress.

Objective environments (e.g., school and teachers) may go to great lengths to present special programs for the retarded in as positive a light as possible. In contrast, the subjective environment of many retarded persons may perceive them as negative and set up for individuals who are "dumb" or "stupid". When this occurs and when the subjective person or self-concept is essentially negative we may have P-E fit. However, for the retarded person who is modeling a normal sibling or peer and whose subjective person tends to be positive, the match up with a subjective environment that is perceived as negative and degrading may produce considerable stress and a poor P-E fit.

The disturbed adolescent whose subjective environment clearly reads the objective environment and recognizes a family's high expectations and whose subjective person or self-concept is very low is apt not only to experience considerable stress but also a poor P-E fit.

Improving Objective and Subjective P-E Fit

What can be done about poor objective and subjective P-E fit and resultant stress? *Coping* is suggested as a possible solution by authors contributing to P-E fit theory (Harrison, 1978; Kroeler, 1963). in this context, coping is defined as "activities of the individual directed to changing the objective environment or changing the objective person in ways to improve the fit between the two" (Harrison, 1978, p. 178). French et al. (1974) defined coping in two ways: (a) Changing the objective environment to promote a better P-E fit is called *environmental mastery;* and (b) changing the objective person to promote a better fit is referred to as *adaptation*. The blind person denied independent living or adequate employment opportunities may attempt to change the expectations of the objective environment through membership in activist groups for the blind or by supporting advocacy legislation. The individual with a learning disability may actively seek tutorial help and make progress in coping with the demands of school in the objective environment. As the individual's reading skills improve we see a change in the objective person which will further have a positive influence on the objective environment. Negative attitudes toward the retarded in the objective environment may also be changed through coping. The retarded individual who attempts to model the grooming and dressing skills of his nonexceptional sibling is engaged in coping and may achieve a better fit with the objective environment. The fearful adolescent who seeks out the school counselor for assistance with his or her demanding family provides another example of a coping effort designed to promote a better fit.

In addition to coping, availability and utilization of social support is a method of reducing the stress associated with a poor P-E fit. Social support is usually defined as "the existence or availability of people on whom we can rely, people who let us know that they care about, value, and love us" (Sarason, Levine, Basham, & Sarason, 1983). Research studies show that social support not only contributes to positive adjustment and personal development but also serves as a buffer against the effects of stress (Murphy & Moriarty, 1976; Sandler, 1980).

Seligman (1975) discussed the dilemma facing those who believe that the individual has little or no control over the objective environment, calling the resulting phenomena "learned helplessness". Simply put, when the person believes that the expectations and reinforcers of the objective environment cannot be predicted or controlled, they may become depressed and given to a marked reduction in initiating responses. This so-called helplessness and feeling of lack of control — of the objective person over the objective environment — seems common to many expectional individuals and can be clearly linked to a lack of P-E fit.

Coping and social support overlap to a considerable extent with aid from the latter leading to development of the former. The blind individual who is allied with an advocacy group receives social support. The learning disabled individual who receives tutorial help from a caring and special educator, and retarded children whose parents, peers, relatives, or teachers teach them to meet the demands of the objective environment are fortunate recipients of social support, as are the shy disturbed adolescents from contact with counselors.

Poor P-E fit may be ameliorated by use of traditional defense mechanisms which have emanated from psychoanalytic theory. Denial, rationalization, projection, and intellectualization may reduce stress between the individual and the environment. If the objective environment sets unreasonable standards and demands that the objective person can in no way handle, the subjective environment and subjective person may achieve fit by denying that these demands exist or by rationalizing that they are unreasonable or unimportant. The blind individual whose subjective environment perceives the restrictions and demeaning attitudes of the objective environment and whose subjective person radiates confidence may ease the lack of P-E fit by rationalizing the discrepancy with the feeling "you just can't fight city hall", or projecting blame on certain politicians whose policies are merely being implemented by underlings.

The individual with a learning disability may get an accurate subjective environment readout of the objective environment's academic expectations but his subjective person may deny he lacks the skills to meet those expectations (I could read the work if I wanted to) and achieve P-E fit. Projecting the blame for the mismatch between environmental expectations and person abilities on "boring" classes, "crabby" teachers, and "stupid" textbooks may also be an effort to achieve P-E fit.

When severely retarded individuals have been asked why they have ended up in state institutions, few if any say "Because I'm retarded" or "Because I'm dumb". Their subjective environments correctly read the objective environment and acknowledge the placement. But when it comes to the subjective person, the retarded individual may use rationalization or projection — "I'm in here because I don't read so good", "I'm in here because my family doesn't like me", "I'm in here because I got into trouble with the police". One of the myths in special education is that retarded individuals are oblivious to others' perceptions or that they lack self-perceptions of being retarded. This is most certainly not the case; Edgerton's (1967) work has borne out the fact that retarded individuals, or any others, may attempt to achieve a P-E fit through use of rationalization and other defense mechanisms. The disturbed adolescent may not only deny he is a loser in relation to his family's expectations, but may also decide he is a genius in ways that are not appreciated and through reaction formation avoid the lack of P-E fit that would bring him pain and stress.

More recently, efforts to explain problems in objective and subjective person-environment fit can be found in attribution theory (Weiner, 1972). According to attribution theory, as the subjective environment and the subjective person attempt to explain stresses, positive and negative aspects, and successes and failures associated with the objective environment and objective person, they may make certain "attributions". Four major attributions for dealing with success and stress that have been studied are *ability, effort, task difficulty,* and *luck.* When an individual experiences stress or failure in his/her job or school work, an attributional explanation may related to one or more of these:

- I'm not smart enough (ability).
- I didn't try hard enough (effort).
- The job or work was too hard (task difficulty).
- I just had lousy luck (luck).

Conversely, when an individual experiences success on the job or in school, attributional explanations may include:

- Boy, I'm really smart (ability).
- I really worked hard (effort).
- The job or work was a snap (task difficulty).
- I really had a lucky break (luck).

As can be seen, ability and effort are related to the objective and subjective person, while task difficulty and luck are related to the objective and subjective environments. Depending on the individual and the situation the use of attributions may be a way of both improving or aggravating person-environment fit.

In addition to defense mechanisms and attributions, social support may be very beneficial in bringing about a better subjective P-E fit. All previous examples with respect to improving objective P-E fit apply. That is, as an individual is helped to obtain a more realistic perception of their environment (and of themselves in relation to it) — whether it be through contract with a psychoanalyst, psychotherapist, school counselor, teacher, minister, close friend, or parent — chances are stress may decrease and P-E fit may increase.

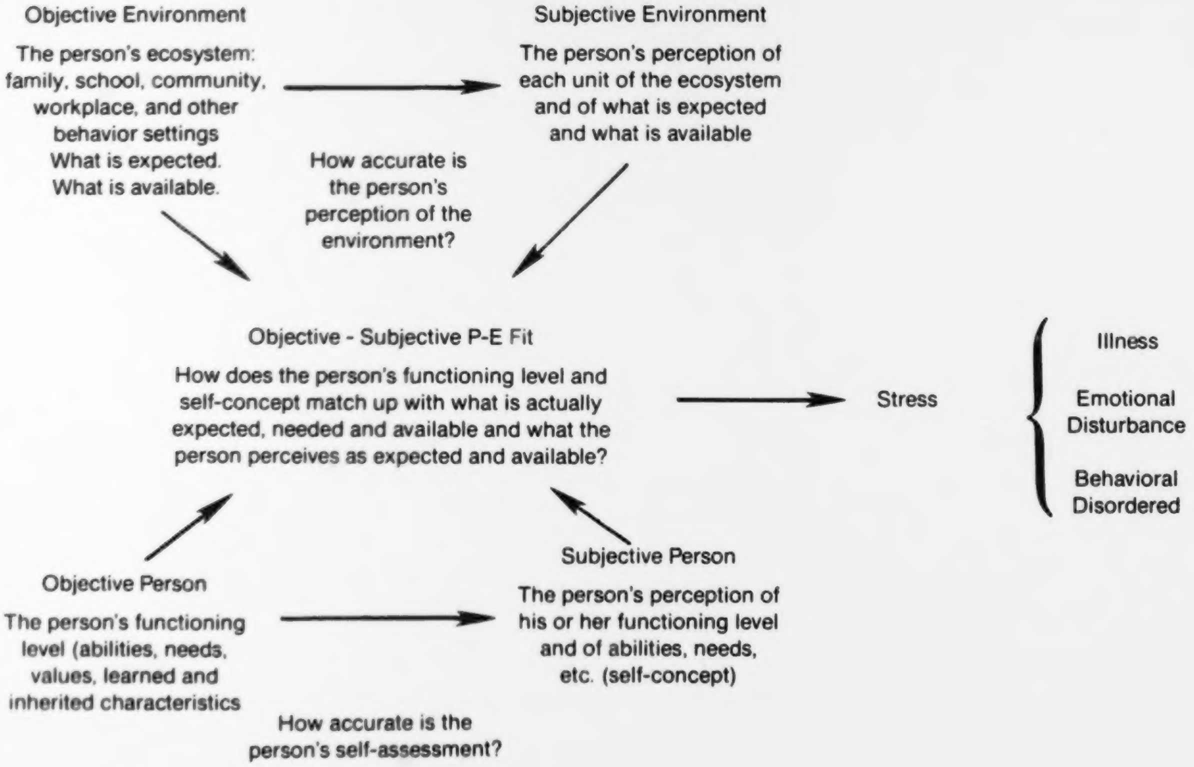
The Relationship Between Objective and Subjective P-E Fit

As can be seen in Figure 3, the objective and subjective environment are linked by consideration of accuracy. The more accurately the subjective environment perceives the expectations and available reinforcers in the objective environment, the greater the degree of reality contact. This can be complicated by the fact that some parents, teachers, and others may go out of their way to disguise the exact nature of the objective environment.

Mother: "You know, I don't care whether or not you get good grades."
Teacher: "This special education class is just like any other class in the school."
Coach: "I don't really care if we win or not, it's how we try that counts."
Father: "Of course I don't love you any less because you're not as smart as your brother."

The situation may be further complicated by characteristics of the objective person. Children who withdraw or who forget easily or who do not pay attention may have fragmented views of their environment. Sensory impairments such as blindness or deafness make it more difficult to attain a comprehensive and aaccurate picture of the real world. Orthopedic and health impairments restrict opportunities for reality contact. Cultural and language differences may also greatly limit the subjective environment's accuracy of perception of the characteristics of the objective environment.

In Figure 3, the objective and the subjective person are also joined by consideration of accuracy. Perhaps no other match up is as critical in special



Objective Environment

The person's ecosystem: family, school, community, workplace, and other behavior settings
What is expected.
What is available.

Subjective Environment

The person's perception of each unit of the ecosystem and of what is expected and what is available

How accurate is the person's perception of the environment?

Objective - Subjective P-E Fit

How does the person's functioning level and self-concept match up with what is actually expected, needed and available and what the person perceives as expected and available?

Objective Person

The person's functioning level (abilities, needs, values, learned and inherited characteristics

Subjective Person

The person's perception of his or her functioning level and of abilities, needs, etc. (self-concept)

How accurate is the person's self-assessment?

Figure 3. *The relationship between Objective and Subjective Environment and Person and P-E Fit.*

education. Specifically, as an individual's functioning level falls below the expectations of the environment, and as one's physical attactiveness, popularity, speech adequacy, and problem-solving ability differs markedly from what is typical, it becomes very difficult to assess oneself in anything but a negative light.

The arrow to the far right of Figure 3 indicates that lack of P-E fit may lead to stress which in turn may result in illness and disturbed behavior. Thus it is not enough to merely question whether or not the objective environment and objective person match. In the final analysis what counts are the perceptions of the subjective environment and subjective person. The objective environment may offer the $200,000 a year top executive a $1,000 a month raise and result in severe stress and an eventual deep depression on his/her part as the subjective environment (What do I perceive as a sign of success in my job?) and the subjective person (What am I really worth?) simply don't fit. A similar $1,000 a month raise to the $25,000 a year junior executive may produce very dissimilar results as the subjective environment (What do I perceive as a sign of success in my job?) and the subjective person (What am I really worth?) match up very well. The concept of *cognitive dissonance* (Festinger, 1957) is relevant here.

In addition, when an intervention apparently works on the objective environment-person level, it does not necessarily follow that our problems are solved. Willems (1974) presents a telling example. A mother sought help from a behaviorally oriented clinic for her son whose behavior was becoming increasingly difficult to control. The clinic staff obtained baseline measures and found the mother was nagging the boy dozens of times each hour. By teaching the mother to withhold attention the staff was successful in reducing impressively the mother's "nag rate". Concurrent changes were observed in some of the boy's problem behavior. But once this was accomplished, the mother's rate of eating went up, she gained weight, reported frequent anxiety and tension, and finally abandoned her son and left town. Merely focusing on objective environment-person fit may be irresponsible in cases like this. Undoubtedly, all parties could have profited from also focusing on the mother's subjective environment-person fit, her perceptions of her son, feelings twoard him and toward herself, as both a person and a mother.

Using the concept of both objective and subjective person-environment fit, a definition of mental health may be stated as follows:

> Mental health results from a good match up between a person's abilities and needs and the demands and available reinforcers in the environment, along with a realistic and accurate view of both the environment and the self.

P-E Fit and Assessment

In this section, how the concept of P-E fit might influence traditional assessment practices with exceptional individuals is examined. Traditionally, the objective person has received major attention from the physician and medical specialists. Psychiatrists and psychologists are also concerned with the objective person but their use of interview, therapy, and projective test techniques focuses on the subjective environment and subjective person. Social workers have traditionally been assigned the task of assessing the objective environment. Thus, a thorough assessment of an exceptional individual would at least touch on all four main components of the P-E fit model. Unfortunately, equal recognition has not been given to and only limited attention has been paid to assessing the degree of fit that might exist among these components.

It is one thing to know the physical and neurological status, the I.Q., the perceptual-motor functioning, and language and communication competence of the objective person, and quite another to understand how these relate to the expectations and potential reinforcers or punishment in the objective environment. While the latter has not been totally neglected, it has never been of as much concern as the former. In the final analysis, we have tended to describe the objective person as a status quo, a repository within whom certain characteristics reside. And while we acknowledge the contributions of both heredity and environment in determining these characteristics, we tend to focus on the environment as a static contributor of the past more than as a dynamic, ongoing determiner of the present and future.

We have also fallen short in the scope of our assessment of the objective environment. Within the family mothers may become involved but not always the fathers, siblings, or other relatives. We may know little of the school, the neighborhood, the workplaces of the parents, and other community involvements of the family. We also seldom put the key members of the individual's objective environment into the objective person slot in our P-E fit model and examine them accordingly. What if we paid as much attention to the P-E fit characteristics of the individuals in the objective environment as we did the objective person we are supposedly studying? What if mothers, fathers, brothers, sisters, relatives, teachers, and peers were studied in terms of their objective person, objective environment, subjective person, and subjective environment characteristics? This could lead to some interesting and important information such as:

> How do the mother's abilities and needs match up with the father's, her children's, and her own parents' and other family members' expectations?
>
> What are the reinforcers available to the mother from the father, the other children, her own family? What punishments may occur when she fails to meet others' expectations?
>
> How does the mother perceive her husband and her children?
>
> How does the mother's perception of her husband and her children match up with her perception of herself as an individual, as a woman, as a wife, and as a mother?

What if we set the objective person we have selected to assess completely aside while we rotated each of the significant individuals in his or her objective environment through our P-E fit model? What if we examined their degree of objective and subjective P-E fit and resultant degree of stress *before* we examined our so-called target individual? This would constitute a complete reversal of traditional practices.

An assessment approach like the one suggested here would involve increased use of naturalistic observations, self-report surveys, interviews, conferences, and questionnaires. The "closed-door" isolated, psychiatric interviewing and psychometric and projective testing of the objective person would not necessarily be eliminated, but it would be augmented greatly by efforts to directly examine the objective environment and P-E fit.

Hobbs (1982) has proposed an ecological assessment which includes concern with P-E fit.

> To classify a child in accordance with the plan here proposed, the first step is to develop an "ecological assessment and enablement plan." This is a systematic audit of assets and deficits in the child's ecosystem, again with respect to requirements of service. The assessment involves (1) identifying sources of discord in the ecosystem, as well as sources of strength that can be used to improve the goodness of fit between the individual and important people and places in his/her life, and (2) specifying what resources are required to assure that the child will be able to make reasonable progress toward achievable development goals. The ecosystem of which the child is the defining member should be brought sufficiently into balance to function without undue stress, and to nurture the child's development in an adequate fashion. The goal is not to make the child perfect, but to make the ecosystem work reasonably well. The goal might be achieved by effecting changes in the child, but also by effecting changes in settings in which he is expected to grow and learn, especially in the expectation of people (such as mother, father, teachers, siblings, and friends) who are important in the child's life. (pp. 198-199)

Hobbs recommends an assessment conference be held, participated in by "all the people who have something of substance to contribute to the shaping of a service plan for the child" (p. 199). Hobbs is talking about the objective environment, linking the assessment conference directly to the "enablement plan" which specifies each step necessary to improve the individual's functioning level (e.g., improve P-E fit). Thus, with as many persons from the objective environment as needed present, an assessment outcome or enablement plan is formulated along with the assessment itself. Of course, direct objective person assessments (e.g., intelligence level) may be introduced by certain of those persons (e.g., school psychologist). The enablement plan specifies (a) the tasks to be done, (b) the person responsible for seeing that each task is done, (c) the person or persons who will do the work, (d) the date by which the task should be accomplished, (e) the estimated cost of service, (f) the source of funds to pay for the service, (g) the criteria to be used to establish a successful outcome, and (h) an identification of required follow-ups. There are aspects of this that are quite similar to the federal definition of steps to be followed in devising and implementing the IEP (Individual Education Plan) within Public Law 94-142.

P-E Fit and Interventions

Project Re-ED (re-education of the emotionally disturbed) was developed by Hobbs and others (Hobbs, 1982) using an ecological approach and the assessment and enablement plans discussed above. Briefly, Re-ED is an educationally oriented treatment model for "troubled and troubling" children and adolescents that combines behavioral strategies with an emphasis on group prosess. It also:

1. Places children in groups of eight in a 24-hour program for periods of up to 6 months;
2. Has children return home or to a home placement on weekends;
3. Relies on an educational specialist or teacher-counselor as the primary mental health worker in the classroom and living environment;

4. Relies on a liaison-teacher-counselor to work with the families and other community resources important for improving the child's P-E fit; and

5. Maintains a consultancy relationship with physicians, psychiatrists, psychologists, and other traditional medical and mental health specialists. Though by no means eliminated if its use is indicated for the child's welfare, medication is not relied on in the Re-ED approach.

The Re-ED approach is primarily focused on the objective environments and the objective person and improvement of objective P-E fit. As with other behaviorally oriented approaches, improvement in the subjective environment (reality contact) and the subjective person (accuracy of self-assessment) is assumed to take care of itself once an individual is experiencing success and a good objective P-E fit. However, in group and individual discussions there are many opportunities to clarify the child's perceptions or feelings and attitudes toward members of the objective environment as well as perceptions of and feelings toward himself or herself. Parents and other family members are also helped to achieve better objective P-E fit through efforts of the liaison-teacher-counselor to improve coping skills and provide social support for improved job situations, housing, and the like. Improved subjective P-E fit through social support involving personal or marital counseling or therapy for family members is usually left to community mental health programs which the liaison-teacher-counselor may bring into the picture.

The concept of person-environment fit would appear to hold promise for aiding in student goal selection and for describing and organizing the ecological approach that is a part of Re-ED programs. It would also seem useful for developing an ecologically oriented curriculum. In many respects a Re-ED program is comparable to a 24-hour classroom. Since all key staff members are educational specialists with those in charge of academic classroom hours fully credentialed, it would seem reasonable to conclude that school is never out of session. One of Re-ED's strengths is that it is not compartmentalized as are traditional residential medical-psychiatric programs for the disturbed (e.g., 7:00 *nurses* awaken patients; 7:30 *psychiatric technicians* take patients to dining room and supervise breakfast; 9:00 *school teachers* supervise patients in classroom; 11:00 *psychiatrists* see patients for individual therapy; 1:00 *occupational therapists* engage patients in art and recreational activities, etc.). In Re-ED *teachers* awaken students, *teachers* teach them to read, *teachers* engage them in individual and group goal setting and evaluation settings, *teachers* supervise art and recreational activities, and *teachers* put them to bed.

The Re-ED approach has been around for almost 25 years, yet has been slow to catch on in many parts of the country as a residential model for disturbed children. One reason has to do with its nonpsychiatric focus and the subsequent resistance from the medical establishment. Another reason may be a lack of definition and specificity in Re-ED program goals and procedures. The concept of P-E fit may be of some assistance in this regard.

Some possibilities for curriculum development based on P-E fit will be briefly explored

Objective Environment Curriculum

In a unit on the objective enviroment our focus would be on the real people in the real ecosystems of the individual (not only on those that might be a part of Dick and Jane's middle class suburbia). We would be concerned with expectations and needs of the family, school, workplace, other community settings, and government. We would be concerned with the reinforcers (e.g., grades, praise, salaries, success) associated with each when expectations and needs are met as well as the possible punishments (e.g., failure, disapproval, loss of wages, jail) when they are not. A unit on the objective environment would be directly to the point — *what's expected and what's available.* The possibilities are endless, such as family situations, the classroom, the supermarket, gas station, bus, restaurant, sidewalk, and theater. Goldstein's Social Learning Curriculum (Goldstein, 1974) is an example of one curricular approach aimed at improving an understanding of the objective environment.

Objective Person Curriculum

Related to an objective environment curriculum is one involving the objective person. Here the focus is on individual abilities, knowledge, and skills (academic, social, communicative). How can you better prepare yourself for meeting the expectations of the objective environment? Attention also would be paid to identifying and developing the interests, talents, and strengths of each individual.

Subjective Environment Curriculum

Just as reality contact links the objective and subjective environments, so it is the theme of subjective environment curriculum. On a sensory-motor level, we are concerned with getting individuals to be more attentive, to look more closely, to listen better. We want them to be participants and get readily involved with their objective environments. Emphasis is on sensory stimulation — looking, listening, touching, testing, and smelling. This curriculum also includes movement. It involves anything that gives an individual a thorough and accurate readout of the environment. On the cognitive-affective level, it involves discussion of the meaning of the behavior of those in the objective environment and of our feelings toward them. Role taking or learning to put yourself in the position of another to better understand his or her behavior is a major activity.

Subjective Person Curriculum

Emphasis here is on helping the individual develop a clearer and more accurate perception of himself or herself. Learning to look objectively at our strengths and weaknesses and learning to accept ourselves become important goals. Commercially available affective curriculum materials often include materials in this area as well as in the subjective environment area.

Adelman and Taylor (1983) refer to the concepts of *objective environment and person* curriculum and *subjective environment and person* curriculum as *individualized* and *personalized.* An individualized (objective) curriculum is based on a student's unique current developmental status (e.g., actual achievement level) and is an improvement over a standardized curriculum which arbitrarily expects students to be functioning at such-and-such a grade level. It is a curriculum designed to bring the objective person and environment into better fit.

A personalized (subjective) curriculum on the other hand "is one where the learner perceives the environment and program as accommodating her or his current developmental capabilities and motivation, especially intrinsic motivation" (p. 230). A personalized program accommodates a wide range of individual differences in motivation and stands ready to alter the learning environment in any fashion so it is more favorably and comfortably perceived by the learner.

SUMMARY

Persons and environments have been interacting since the beginning of humankind and we continue to be fascinated with the relative contribution of each in determining human behavior. While strictly person *or* environment explanations would not seem tenable, special educators have been slow to develop interactional approaches that cut across all categories of exceptionality.

Social psychologists have pursued the study of human stress particularly as it relates to the functioning level of the individual in the workplace. One approach looks at person-environment (P-E) fit or the match up between individuals and their environments. This approach would appear to hold promise for organizing and clarifying much of what we know and we do in special education from an interactional standpoint.

According to P-E fit theory, there are two critical person-environment sets of relationships. One concerns the *objective* environment (expectations of family, school, workplace) and the *objective* person (actual person's functioning level, abilities, needs). The other concerns the *subjective* environment (how the person perceives the expectations of the family, school, workplace) and the *subjective* person (how the person actually perceives himself or herself). Of primary focus is the degree of fit between objective and subjective environment and person. As the fit decreases, stress increases and this may lead to physical illness or emotional disturbance. The better the fit, the better the mental health of the individual. Coping, social support, psychological defense mechanisms, and attributions may all figure in attempts on the part of the individual to improve P-E fit. Major special education approaches (behavioral, biophysical, and psychoanalytic) can all be related to the P-E fit model, which also appears to have value as a dissemination and teaching tool for the field.

The concept of P-E fit also has some interesting possibilities for application in assessment and intervention. Ecological referenced assessments looking with equal emphasis at objective environments and persons and subjective environments and persons and their respective fits may provide richer and more comprehensive data. P-E fit curricular approaches focus on ways of helping individuals better understand individuals, expectations, and consequences in the objective environment and match these with their abilities and skills. In addition, the perceptions, feelings, interpretations, and attitudes of the subjective environment and person become part of the curriculum activities.

The notion that stress caused by poor objective and subjective person-environment fit may aggravate any existing exceptionality and indeed may be the central issue in efforts to understand and ameliorate exceptionalities is a *unifying* one for special educators. The notion that stress caused by poor person-environment fit is essentially the cause of emotional disturbance and behavioral disorders is also a *unifying* one, particularly for those convinced the time has come to adopt an ecological perspective.

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The Learning-to-Fail Phenomenon as an Obstacle to Mainstreaming Children with Behavioral Disorders

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A range of factors contribute to children's learning and behavior problems. As Wallace and Kauffman (1978) have asserted, there seldom is a single cause of difficulties in learning. Sociocultural, psychodevelopmental, sensory, and motivational factors have each been associated with learning problems (Samuels, 1981; Wallace & Kauffman, 1978). Kauffman (1984) has identified biophysiological and child rearing-family interaction patterns as significant variables in the complex causal chain that can generate such problems. However, the educational experience itself can contribute to the development of learning problems. While certain youngsters manifest such problems prior to beginning their schooling, regular public education may create or exacerbate the learning problems of other children (Kauffman, 1984). Indeed, much of what is variously labeled emotional, behavioral, and/or learning disorders is school-induced (Trippe & Mathay, 1982). It has been estimated that more than half of these disabilities are related to inappropriate expectations regarding student performance and behavior in the classroom (Stanford Research Institute, 1977). Classroom structure, demands for new skills, and emphasis on uniformity may precipitate disorders that were not manifest until entering school (Kauffman, 1984). We often point an accusatory finger at students labeled behaviorally disordered, whereas the circumstances that create and maintain these disorders go largely unchallenged.

Data regarding classroom placement indicate that nearly 50% of behaviorally disordered students receive educational services in regular classrooms (Ysseldyke & Algozzine, 1984). Yet a recent longitudinal study found that fewer than 12% of these students are able to maintain satisfactory progress in rate of learning and social adjustment (Edgar, 1984). The following discussion concerns factors that may contribute to school behavior problems and academic failure. Kauffman (1984) conceptualized the school's contribution as consisting of insensitivity to individual differences, nefarious contingencies of reinforcement, and inappropriate standards and expectations. We have characterized the product of these factors as a *learning-to-fail* phenomenon. The purpose of this article is to examine possible relationships between educational practices and students' learning and behavioral disorders, and to suggest that teacher training efforts be aimed at reducing the impact of these practices.

First, literature pertaining to the quality/quantity of instruction is presented, and factors related to the frequent mismatch between instructional needs and services afforded to the behaviorally disordered are discussed. Second, a review of classroom-based research highlights some major discrepancies between our knowledge of teacher attention and approval, and current practices in both special education and mainstream classrooms. Third, the argument is presented that failure to establish functional performance standards and expectations contributes to maintaining unacceptable levels of classroom conduct while retarding the academic achievement of behaviorally disordered students. Since teaching and learning variables are interactive, our contention is that it may be shortsighted to view either the problem or the solution as vested exclusively in changing pupil behavior.

FAILURES OF INSTRUCTION

Insensitivity to Individual Differences

A decade ago, Kauffman, Hallahan, Payne, and Ball (1973) proposed that teacher effectiveness is related to instructional effort, behavior change, and time. Growing research evidence supports the fact that the time teachers afford to actual instruction is a critical factor influencing student achievement. Studies have revealed a positive relationship between the amount of time students are engaged in academics and subsequent scores on standardized achievement tests (e.g., Greenwood et al., 1981; Reith, Polsgrove, & Semmel, 1980; Reith, Polsgrove, Semmel, & Cohen, 1980). That some students are discriminated against on the basis of disturbing classroom behavior is not surprising (Algozzine, 1980). Biasing effects of a student's behavior are evidenced by not only fewer learning opportunities but also negative teacher-pupil interactions.

Instructional time and attention. The vast majority of children categorized as behaviorally disordered are delayed academically (Kauffman, 1984). It follows that they should be provided with specialized programs that combine increased opportunity to respond with frequent feedback on performance (e.g., time engagement and accuracy). Unfortunately, classroom studies indicate that the time allotted for academic instruction is variable and usually far less than is desirable. For example, Hall, Delquadri, and Harris (1977) discovered that regular fifth graders spent nearly 50% of the class day engaged in noninstructional, transition activities (e.g., obtaining materials, moving from one area to another). Hall and his colleagues reported that the students observed spent less than 8 minutes daily making oral or written response to academic tasks. If nonhandicapped students receive this little direct instruction, it is unlikely that handicapped pupils will fare any better. Indeed, similar time allocations for academics have been reported in special education classrooms (e.g., Englert, 1984).

Equally discouraging are investigations showing that teachers spent more time interacting with pupils they rate as having higher potential than those they perceive as having lower ability (Lynch & Ames, 1972). Studies conducted in special classrooms confirm that teachers respond more positively to high-achieving than to low-achieving students (e.g., Bryan, 1974; Heward, 1978). Relatedly, Thompson and Morgan (no date) found that children with learning problems received fewer opportunities to respond than did their more capable peers. More recently, Strain, Lambert, Kerr, Stagg, and Lenkner (1983) found that regular classroom teachers offer more negative feedback following noncompliance than positive feedback following compliance to a teacher command. Gable and his colleagues reported comparable data gathered in classrooms for the behaviorally disordered (Gable, Hendrickson, & Young, 1983). These investigators also found that teachers were inclined to respond to rather than ignore episodes of noncompliance. Taken together, these findings suggest that neither regular nor special educators necessarily allocate enough time for learning or deliver a sufficient amount of feedback to maintain appropriate classroom performance.

Misguided interactions. A recent experimental study suggests that teacher-pupil interactions in regular classrooms may actually thwart special education efforts. McConnell, Strain, Lenkner, and Szumowski (1985) assessed changes in teacher behavior following the introduction of a consultant-operated behavior management program. Four first-grade students, identified by their teachers as being low performers or failing to make adequate school adjustment, were exposed to a powerful contingency management program (adapted from Hops, Beickel, & Walker, 1976) designed to increase time-on-task during independent seatwork exercises. Before treatment was implemented, the students' attention to tasks was low and variable, ranging from 30 to 70%. During this same period, only a moderate amount of teacher attention was provided to the students. As expected, students' time-on-task increased dramatically following the introduction of the consultant-operated contingency management system, with daily on-task behavior ranging from 80 to 100% and generally exceeding 90%.

During this phase, however, teacher attention for academic and appropriate behavior unexpectedly disappeared. When treatment was withdrawn, children's rates of on-task performance declined to pretreatment levels; at the same time, rates of teacher attention returned to their original, higher levels. When treatment was reinstituted, the original effects were again obtained: that is, students' time on-task returned to 90 to 100% and teachers' rates of attention declined sharply. Rather than providing verbal prompts and praise statements that would be likely to maintain adaptive behavior, this unanticipated shift in teacher behavior may have directly contributed to a reversal of treatment effects and thereby a continuation of maladaptive/inappropriate classroom behavior. We suspect that such misguided interactions in which academic productivity is taken for granted are not isolated occurrences (Gable et al., 1983).

Implications for teacher training. Available literature indicates that exceptional learners need an accelerated program of instruction; however, many special *and* regular classrooms offer diminished amounts of instructional time and teacher attention for on-task behavior (Gable et al., 1983; Strain et al., 1983). If we can accept the studies cited as reasonably representative, then one implication is that teacher training should emphasize (a) managing instructional time, (b) regulating the number and varying the complexity of response opportunities for students, and (c) monitoring the amount of pupil attention/feedback.

Research suggests that disturbing children may sometimes be the product of adult perceptions (Algozzine, 1980). To the extent that teacher-defined behavior problems influence the outcome of instruction, alternative arrangements may be indicated. Another approach to increasing instructional time is to train teachers to initiate programs in which classmates carry out supplementary instruction. Accumulated evidence shows that peer-mediated academic drill and practice is both feasible and beneficial for handicapped students experiencing difficulty mastering basic skills (Englert, 1984).

Nefarious Schedules of Reinforcement

On the basis of a series of classroom-related studies, Cantrell, Stenner, and Katzenmeyer (1977) concluded that a positive correlation exists between teachers' knowledge of behavioral principles and their use of more praise than criticism. These investigators found that the students of teachers using more praise than criticism exhibited higher levels of achievement than did students taught by educators who provided more criticism than praise, or no more praise than criticism. These findings underscore the importance of applying behavioral strategies in treating children's behavioral disorders. Unfortunately, many teachers do not appear to initiate approval statements frequently enough to sustain appropriate behavior in special education (Gable et al., 1983) or mainstream settings (White, 1975).

Earlier studies have shown that exceptional students can be taught to ignore provocations of regular classroom teachers, offer praise for assistance and special assignments, and in turn significantly modify perceptions teachers hold with regard to mainstreamed students (e.g., Graubard, Rosenberg, & Miller, 1977). The effects of these changes in pupil behavior on teachers suggests that another strategy for increasing teachers' use of contingent praise may be to train behaviorally disordered youngsters to recruit increased levels of academic instruction and contingent teacher attention (Morgan, Young, & Goldstein, 1983). In the study previously described, McConnell et al. (1985) followed the last phase of increased academic on-task and decreased teacher attention with a program that taught the students to solicit academic assistance and praise for their performance. During this phase, children's on-task performance was maintained at high and relatively stable levels; teacher attention, directed to appropriate behavior, increased to baseline rates. In sum, only when efforts were directed at specific behaviors and critical aspects of teacher-pupil interaction was appropriate instruction obtained and patterns of maladaptive behavior reversed.

Implications for teacher training. Assuming that praise statements serve as reinforcers for most behaviorally disordered students, their limited use is an obstacle to academic success (Gable et al., 1983). Given that praise is a proven means for managing classroom conduct and academic instruction, and preservice training does not always transfer to applied settings, use of "praise strategies" should also be emphasized by inservice personnel. Ultimately, training in peer observation and feedback or teacher self-monitoring procedures may be needed to ensure its sustained application. Finally, as mainstream teachers often differentially react to disturbing students (Algozzine, 1980), teacher preparation should include strategies for training behaviorally disordered students to "put their best foot forward" (Morgan et al., 1983).

Inappropriate Teacher Expectations

Efforts by regular and special educators to offer instruction geared toward meeting the individual needs of the behaviorally disordered may be hindered by the fact that so-called blanket performance criteria have usually been imposed (i.e., 85% attainment). Preliminary data obtained in a survey of special services in a tri-state area (i.e., Pennsylvania, West Virginia, and Virginia) suggest that teachers of behaviorally disordered pupils routinely specify goal attainment according to accuracy alone (i.e., X% correct). Percentage reflects the accuracy of a student's performance on subject matter. It may imply that 100% is the "ceiling" beyond which no further improvement is expected. It can be argued that emphasizing accuracy without regard for fluency (i.e., accuracy and speed) hinders academic proficiency, which in turn serves only to maintain a discrepancy between behaviorally disordered students and their normal counterparts.

In contrast, introducing so-called normative data supplemented with actual classroom observation should yield information with which regular and special education teachers can establish more useful standards of instruction. Gathering multiple samples of the rates of oral reading, arithmetic computation, etc. for higher- and lower-functioning nonhandicapped students earning passing grades would establish a "band of scores" against which to judge the academic skills of behaviorally disordered students (Hendrickson, Gable, & Stowitschek, in press). Correspondingly, it seems shortsighted to disregard behavioral demands that may vary across classrooms but which have a significant influence on the integration of behaviorally disordered students with normal peers. Data for making placement decisions can be obtained through classroom observations and structured interviews with both teachers and students (Hoier & McConnell, 1984).

The importance of obtaining broad-based, normative data for establishing educational treatment goals is borne out by recent research. In a comprehensive assessment of both successful and unsuccessful elementary school students, McConnell et al. (in press) found that measures of academic achievement, academic engagement, compliance with teacher requests, and children's interactions with peers together may constitute necessary elements of overall satisfactory adjustment. Failure to take into account the importance of multiple adjustment factors may limit the outcome of treatment efforts and thereby diminish the likelihood that behaviorally disordered students will be able to perform at a level comparable to nonhandicapped peers. In contrast, combining data obtained on a range of classroom behaviors with strategies for promoting attainment of locally-defined levels of learning and adjustment should contribute to more successful reintegration of behaviorally disordered students.

Implications for teacher training. Reliance on unsupported opinion hinders efforts to assess social skills that are prerequisite to placement in less restrictive settings. Use of only a percent criterion does not necessarily yield sensitive or comparable indices of a behaviorally disordered student's ability to perform academically on levels commensurate with nonhandicapped classmates. By comparison, training in the collection and use of peer-referenced standards can provide special educators a social referent to quantitative and qualitative aspects of regular classroom expectations (Forness, 1979; Hendrickson et al., in press; Walker & Hops, 1976). Both classroom conduct and achievement level contribute to or detract from pupil acceptance (Algozzine, 1980). It follows that each facet of pupil behavior must be considered in the mainstreaming process.

CONCLUSION

While somewhat speculative, let us assume that the practices described are factors that contribute to learning and adjustment problems of behaviorally disordered students. A growing number of mildly to moderately behaviorally disordered students are being served in the mainstream. It follows that changes not only in pupil but also teacher behavior are essential to enable more normal academic and social functioning. Accordingly, specialized programs might reflect elements of "worst practices" that students may encounter after placement in regular classrooms (e.g., insensitivity to individual differences and nefarious contingencies of reinforcement). Preintegration training would serve to "innoculate" students against the vicissitudes of public instruction. Also, special educators need to be prepared to take on a more active consultative role to assist regular teachers in learning to manage most instructional and behavior problems (see Kerr & Nelson, 1983). Indirect services to those who participate in the mainstreaming process should lead to greater congruence between student capabilities and the expectations of regular classrooms.

As school failure is a frequent concomitant to maladaptive behavior (Kauffman, 1984), greater emphasis on modifying multiple facets of behavior which stand as stumbling blocks to mainstream education is indicated (McConnell et al., 1985). A complete technology for remedying problems that mitigate against satisfactory integration is lacking. Questions regarding whether or how these obstacles can be removed warrant the attention of teacher educators so that a stronger interprofessional relationship between special and regular classroom teachers can be established. Only then will we be able to reverse the learning-to-fail phenomenon among children with behavioral disorders.

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Early Intervention for Behaviorally Disordered Children: An Integrative Review

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ABSTRACT

This paper reports the results of a meta-analysis on early intervention efficacy research. A detailed description on the subset of data that pertains to early intervention programs for behaviorally disordered children is provided. Group research efforts in this area have generally focused on modeling studies involving withdrawn preschoolers, therapeutic nursery studies involving aggressive children, and pharmacotherapy studies involving schizophrenic or hyperactive children. Average effect sizes were strong in all areas, indicating that early intervention efforts have been effective for behaviorally disordered children. Validity indexes, however, were relatively weaker for therapeutic nursery studies than for pharmacotherapy or modeling studies. Implications for future early intervention research efforts are discussed.

Although the field of early intervention is relatively new, a widely disseminated conclusion stemming from available efficacy research is that early intervention programs are generally effective (White, Bush, & Casto, 1985). The increase in early intervention programs during the past two decades can be attributed, at least in part, to the recent emphasis on prevention in the behavioral and health sciences. One program that offered stronger support for the possible long-term influence of early intervention, the Perry Preschool project, began in the 1960s to investigate the effects of a cognitive curriculum preschool program for disadvantaged 3- and 4-year-olds. A longitudinal study on the efficacy of this program found that disadvantaged youngsters who attended preschool had lower rates of delinquent acts by age 15 (Schweinhart & Weikart, 1980) and fewer arrests and juvenile court referrals by age 19 (Barrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984) compared with control subjects who had no preschool. In addition, Weikart and his colleagues reported that these students exhibited greater overall social responsibility measured by family relationships, community relationships, personal-social characteristics, and involvement with the legal system than control group students who had no preschool experience (Barrueta-Clement et al., 1984).

In addition to such projects as the Perry Preschool, the early Head Start programs implemented objectives which were directly pertinent to the field of behavioral disorders. Although the findings of many of the earliest programs were limited due to methodological problems (White, Mastropieri, & Casto, 1984), these objectives were directed toward promoting appropriate social behavior in disadvantaged preschoolers, thereby reducing the incidence of behavioral disorders in the schools later on. These objectives include promot-

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ing (a) cooperative play, (b) expectations of personal success, (c) positive family interactions, (d) community responsibility, and (e) feelings of dignity and self-worth (see Zigler & Valentine, 1979).

These objectives appear promising as support for preventative early intervention programs due to their stated emphasis on development of positive social skills. Other early intervention programs, however, have been established to remediate existing behavior problems in preschoolers. The focus of this paper is on the overall results of a meta-analysis of (a) early intervention efficacy research, and (b) the specific findings of those studies of the efficacy of early intervention with behaviorally disordered preschoolers. To date, however, no comprehensive synthesis of these interventions has been attempted.

Background

As part of a larger work scope, the Early Intervention Research Institute (EIRI) at Utah State University (Casto, White, & Taylor, 1983) conducted a meta-analysis of all early intervention research literature. As proposed by Glass (1976), a meta-analysis is an attempt to (a) locate either all studies or a representative sample of studies, (b) code the study characteristics that might have covaried with the study's results, (c) convert the results of each study to a common metric, and (d) summarize the study outcomes and study characteristics. What follows is a brief description of the EIRI's procedures for conducting the meta-analysis.

Data Base for Analysis

Early intervention studies were located by computer-assisted searches of the following databases: *Psychological Abstracts, ERIC, Dissertation Abstracts, Index Medicus,* and *SSIE Current Research.* In addition, three other procedures were followed. First, reviews of early intervention efficacy research were examined for primary research articles. Second, professionals and service providers prominent in the field were asked to assist in identifying fugitive and unpublished research reports. Finally, primary efficacy research studies that were referenced in articles already obtained were acquired.

Coding system. A coding system was developed to analyze the characteristics and outcomes of each study. Coded were 98 items to incorporate the following variables: (a) subject characteristics (e.g., child and family demographic data), (b) intervention characteristics (e.g., home- versus center-based programs, child-teacher ratios), (c) research design characteristics (e.g., type and quality of design), and (d) the study's outcome and conclusions (effect size). Quality of design was assessed using Campbell and Stanley's analysis of threats to validity (1966). The effect size of the study was estimated using a standardized mean difference effect size defined as $X_E - X_C + SD$ by Glass, McGaw, and Smith (1981).

This effect size (ES) measure is the difference between the experimental and control groups in *z*-score units. Recently, effect sizes have been used widely to document the effectiveness of educational programs (Cohen, 1977; Glass, 1976; Horst, Tallmadge, & Wood, 1975; Kavale & Forness, 1983; Kavale & Glass, 1981). If effect sizes are positive, results favor the early intervention programs, while negative results indicate that the intervention programs were not effective. An ES of + 1.00 indicates that a treated subject at the 50th percentile of a given measure would be expected to gain 34 percentile points and thus be at the

84th percentile at the end of the intervention. Using IQ as an example, a treated subject would increase one standard deviation, or in this case, 15 points on a typical IQ test. An ES of .25 standard deviation units has been considered "educationally significant" (Tallmadge, 1977).

In addition, conventions or rules for each item were written to ensure consistency in coding. Because standard formulas were used for computing effect sizes, reliability (interrater agreement) computed for all effect sizes coded reached 100%. Reliability of study characteristics (computed as percentage of interrater agreement) or a random sample of approximately 10% of coded studies yielded an average of .87.

Results

The entire data set consisted of 2,105 effect sizes from 234 primary research studies. Of those effect sizes, 215 were from studies using handicapped populations while the remaining were from studies which utilized disadvantaged subjects. The overall conclusion of the integrative review was that early intervention programs result in immediate positive benefits of a half of a standard deviation effect size. Using IQ as an example, the average intervention program results in gains of 7.5 IQ points.

Complete results of the EIRI meta-analysis are reported in White and Casto (in press) and Casto and Mastropieri (in press). However, an interesting and previously unreported subset of these data involves group efficacy studies designed to ameliorate problems of behaviorally disordered preschoolers. Results of these data follow.

Overall Characteristics of the Data Set

The 44 effect sizes included in the present analysis came from 15 studies conducted from 1969 to 1979 which were reported mostly in educational and psychological journals. The outcome measures used in these studies included developmental scales or IQ, measures of behavioral functioning, and system rating scales. The majority of early intervention efficacy research has typically focused on IQ outcome measures rather than other potentially significant variables related to child development and parent/family functioning (e.g., family interaction and social skills development).

Little or no attempt at assessing generalization was found in 88% of the effect sizes. Of the outcomes 83% were measured immediately upon completion of the intervention, while 17% were obtained at delayed time periods ranging from one to two months to test for maintenance of effects. An overall summary of the data shows that the average effect size for intervention studies involving behaviorally disordered preschoolers is .80 (Table 1). These effect sizes were derived from studies that compared (a) intervention and control groups, (b) one type of intervention with another, and (c) pre-post measures on an intervention.

Table 2 presents descriptive data on the subject and intervention characteristics across all 44 effect sizes. The 15 studies that used subjects classified generally as behaviorally disordered were further subdivided into 3 groups: (a) social modeling studies with withdrawn preschoolers, (b) drug studies with schizophrenic preschoolers, and (c) therapeutic nursery programs for aggressive and acting-out preschoolers. Table 3 presents the overall effect sizes and internal validity indices for each group. However, in order to provide more

TABLE 1

Average Effect Size for Interventions Involving Behaviorally Disordered Preschoolers Broken Down by Quality of Study

All Studies				Quality of Study					
				Good		Fair		Poor	
ES	S_{em}	n_{es}*	$n_{(studies)}$	ES	n_{es}	ES	n_{es}	ES	n_{es}
.80	.16	44	15	.73	18	.80	19	.95	7

*n_{es} = Number of effect sizes

TABLE 2

Descriptive Subject and Intervention Characteristics

Variable	**Mean**	**Standard Deviation**
Start age	52.3 (months)	5.7
Intervention length	8.2 (weeks)	10.2
IQ prior to intervention	88.5	17.2
Number of subjects per study	15.5	8.4
% of sample male	62	18.8
Age at completion of intervention	55.6 (months)	7.1

meaningful information for each subgroup of studies, results are discussed separately below.

Social Modeling Studies

Modeling procedures to decrease withdrawn behavior in preschoolers were used by 6 studies yielding 17 separate effect sizes. None of these studies involved parents as interveners, and all were conducted in classroom settings. The typical study (i.e., O'Connor, 1969, 1972) selected social isolates from nursery school settings, showed modeling films that depicted appropriate social behaviors, and then observed the behavior of the social isolates. Evers and Scharz (1973), Evers-Pasquale and Sherman (1975), Gottman (1977), and O'Connor (1969, 1972) demonstrated that positive social interaction increased for withdrawn preschoolers after viewing positive models of interaction. Although Furman, Rahe, and Hartup (1979) used a different method than film viewing, they too found positive increases in the social behavior of withdrawn preschoolers after positive social contact with either younger children or age peers. These interventions were of relatively short duration (average length = 2.2 weeks) and used rigorous experimental designs, as evidenced by internal validity indices.

TABLE 3

Average Effect Sizes

STUDY **Social Modeling**	**Outcome Measures**	**Average Effect Size (N)**
Evers & Schwarz (1973)	Behavioral Observation	.44 (3)
Evers-Pasquale & Sherman (1975)	Behavioral Observation	2.38 (1)
Furman, Rahe, & Hartup (1979)	Behavioral Observation	.80 (3)
Gottman (1977)	Behavioral Observation	.33 (1)
O'Connor (1969)	Behavioral Observation	5.30 (1)
O'Connor (1972)	Behavioral Observation	.32 (8)
Overall		.84 (Nes = 17)
Pharmacotherapy Studies		
Campbell, Fish, David, Shapiro, Collins & Koh (1972)	Symptom Rating Scale	1.22 (5)
Campbell, Fish, Korein, Shapiro, Collins & Koh (1972)	Symptom Rating Scale	.52 (1)
Campbell, Fish, Shapiro, & Floyd	Symptom Rating Scale	1.60 (2)
Campbell, Fish, Shapiro, & Floyd	Sympton Rating Scale	1.04 (4)
Schleifer, Weiss, Cohen, Elman, Cvejic, & Kruger (1975)	Clinical Observation, Hyperactivity Rating Scale	.54 (9)
Overall		.90 (Nes = 21)
Therapeutic Nursery		
Gingold & Hayley (1979)	Alpein-Boll, Therapeutic Evaluation and Treatment Center Skills Assessment	.44 (2)
Hainsworth (1975)	McCarthy Scales, Metropolitan Readiness Test, Preschool Screening System	.70 (2)
Kestenbaum (1969)	Behavioral Observation	-.22 (2)
Swan, Beardsley, & Wood (1970)	Developmental Therapy Referral Form Checklist	NC*
Overall .31		(Nes = 6)

*NC = None calculated

Pharmacotherapy Studies

Medication to decrease inappropriate behavior in either hyperactive-disturbed or schizophrenic preschoolers was used in 5 studies yielding 21 separate effect sizes. None of these studies involved parents as interveners, and most (4 of 5) were conducted in clinical settings. The typical study (i.e., Campbell, Fish, Shapiro, & Floyd, 1972) manipulated the type of medication that was administered to disturbed preschoolers, including thiothixene, chlorpromazine, trifluperidol (Campbell, Fish, Shaprio, & Floyd, 1970), trifluoperazine, triiodothyronine, methylphenidate (Schleifer et al., 1975), and dextroamphetamine (Campbell, Fish, David et al., 1972). Results typically indicated optimal dosages for decreases in aggressive behavior. These interventions were moderately short (average length = 7.2 weeks) and were rigorous in their experimental design.

Therapeutic Nursery Studies

Therapeutic nursery settings to decrease aggressive behavior in preschoolers were used by 4 studies yielding 6 separate effect sizes. And 3 of these studies (Gingold & Haley, 1979; Hainsworth, 1975; Swan, Beardsley, & Wood, 1970) utilized larger groups of preschoolers with a mixture of handicapping conditions but specifically addressed some components of their interventions for dealing with aggressive, acting-out preschoolers. These 3 interventions were also part of a sample of studies that have been given the Joint Dissemination Review Panel (JDRP) approval for larger-scale program dissemination and are described in detail in White, Mastropieri, and Casto (1984). The program described by Kestenbaum (1969), although not a JDRP project, was similar in that a longer-term (half-day) intervention was employed to examine overall decreases in acting-out behavior.

These reported interventions were longer in duration and intensity (average length = 32.4 weeks) but suffered from more serious methodological weaknesses than either of the other 2 subcategories described earlier. For example, Hainsworth (1975) reported positive pre-post treatment effects but did not employ a control group and did not use "blind" data collectors.

CONCLUSIONS

Results of this review suggest that various interventions with behaviorally disordered preschoolers generally result in positive outcomes. However, in a review of studies reported in the journal, *Behavioral Disorders*, Mastropieri and Howell (1981) concluded that the area of preschool research was very limited in comparison with other age levels. The fact that an extensive literature search yielded only 15 studies employing group designs further substantiates the paucity of research in this area.

Taken together, the data from these early intervention efficacy studies involving behaviorally disordered preschoolers suggest the following:

1. Although there are relatively few group design experimental studies involving preschoolage behaviorally disordered children, available research demonstrates an immediate positive effect for treatment of about 4/5 of a standard deviation.

2. The analysis of the subject and intervention characteristics documents that parents were not involved in the implementation of the studies; that most

interventions were of limited duration and intensity; and that most were implemented in classroom or clinical settings.

3. Studies reporting longer-term educational interventions suffer from methodological flaws that make unequivocal interpretation of results difficult (see White, Mastropieri, & Casto, 1984).

Given the results of the present synthesis, the following recommendations are made for future group research endeavors.

1. Future evaluations of preschool programs involving behaviorally disordered children should be strengthened methodologically. Students should be assigned at random to treatment and control groups. This can be done ethically in areas in which it is not possible to service all children in need of services. Children on a waiting list for services to become available could temporarily serve as a "no treatment" control group. In addition, in areas in which all identified children are served, systematic variation can be made within the intervention program. For example, half of the children could be randomly assigned to an intervention that has a more intensive (vs. less intensive) parental involvement component.

2. Future group research efforts involving interventions for behaviorally disordered preschoolers should focus on the following issues identified by this and other reviews (Casto & Mastropieri, in press; White & Casto, in press): (a) optimal age for onset of interventions, (b) optimal degree and type of parental involvement, (c) optimal duration and intensity of treatment, (d) effects of degree of structure within interventions, and (e) long-term benefits of early intervention. In addition, future researchers should use multiple assessment measures, including measures of social interaction and family functioning, as well as more traditional cognitive/developmental measures.

Although a relatively small number of studies suitable for the present meta-analysis were located, a separate set of investigations has been conducted which employed single-subject methodology to investigate specific behavior changes in preschool individuals with behavioral disorders. Previous single-subject research has uncovered many useful instructional variables such as sociodramatic activities (e.g., Strain & Wiegerink, 1976), parent training (e.g., Wahler, 1969), and social reinforcement (e.g., Buell, Stoddard, Harris, & Baer, 1968; Strain & Timm, 1974). Although no technique exists at present for incorporating such research in the meta-analysis (see *Journal of Special Education, 18*(1), 1984), the staff at EIRI are currently undertaking procedures to synthesize the early intervention single subject literature. Upon completion, this synthesis could provide information complementary to that presented here, and provide further insight into effective preschool interventions for behaviorally disordered children.

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Psychometric Characteristics of the SBS Student Inventory of Social Behavior Standards/Expectations and the SBS Correlates Checklist

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The social skills training of both handicapped and nonhandicapped children has recently become a major focus of researchers and service providers alike in school, mental health, and community settings (Foster & Ritchey, 1979; Gresham, 1981, 1982; Hops, 1983; Strain, 1983; Walker, McConnell, Walker et al., 1983). Social outcomes of the mainstreaming process have, no doubt, contributed to the emerging consensus that systematic social skills training can improve the social adjustment, acceptance, and participation levels of school-age children (Gresham, 1981; Hersh & Walker, 1983). Social skills training programs are being developed that provide direct instruction and therapeutic intervention in social skills presumed to underlie social competence (Jackson, Jackson, & Monroe, 1983; Stephens, 1981; Walker, McConnell, Holmes et al., 1983).

Because of a very limited knowledge base concerning empirical relationship(s) between specific social skills and social competence as measured by sociometric procedures, the inclusion of target social skills in such programs is often arbitrary (Gottman, 1977; Gottman, Gonso, & Rasmussen, 1975). That is, target social skills presumed by adults to influence social processes among peers usually form all or a major part of the content of such programs (Walker, McConnell, Holmes et al., 1983). Achenbach (1978) has noted in this regard that both classification systems and treatment regimens for child psychopathology are simply downward extensions of adult versions of the same that do not reflect the unique characteristics of developmental and age-related stages of growth. The same criticism can be leveled at the content of social skills training programs.

Very little research has been conducted to date on the direct assessment of children in terms of the specific social skills and behavioral competencies they view as essential for successful peer relationships and school adjustment. As there appeared to be no relevant instrumentation currently available to begin an assessment task of this nature, the authors assumed that development of child-oriented instruments via utilization of existing adult-level instrumentation was reasonable. The advantages of this strategy were: (a) a methodology for assessing the social validation of behavioral skills/competencies was in existence; (b) a considerable database was available on adult opinion against which descriptive comparisons could be made; and (c) once a database of children's opinions was established on the existing item pool, more relevant items could

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be added after trend analysis had been accomplished.

Walker (1984) has developed a methodology for assessing the social validation preferences of teachers in relation to the behavioral skills/competencies required for a successful school adjustment (Hersh & Walker, 1983; Walker & Rankin, 1983). The present study applies this methodology to the task of measuirng child preferences. Instrument development procedures and psychometric characteristics of their use with middle school populations are described herein.

METHOD

Walker (1984) and Walker and Rankin (1983) have developed two instruments for assessing the social behavior standards and expectations of teachers (regular and special education) in relation to a successful classroom adjustment. The first instrument, *The SBS Inventory of Teacher Social Behavior Standards and Expectations*, consists of three parts. Part One describes discrete social behaviors considered appropriate in school settings and that facilitate successful adjustment. Part Two describes social behaviors that are considered maladaptive in school settings and that compete or interfere with a successful adjustment. Part Three identifies the technical assistance needs of teachers in remediating either deficient or maladaptive social behaviors. The second instrument, *The SBS Checklist of Correlates of Child Handicapping Conditions*, was designed to assess resistance to placement by teachers of handicapped children who exhibit conditions and characteristics of a primarily nonsocial nature (e.g., eneuresis, deficient self-help skills, sensory deficits).

The SBS Inventory and Correlates Checklist were designed for general use in evaluating/selecting mainstream placement settings and in generating information of a prescriptive nature for preparing handicapped children to meet the behavioral demands/expectations that exist within them. While these instruments and accompanying methodology reflect teacher biases concerning behavioral profiles most facilitative of a successful classroom adjustment, they provide no information concerning peers' judgments regarding the specific behavioral requirements for being liked by others and doing well in school. The student versions of the SBS Inventory and Correlates Checklist were designed to assess this variable. It should be noted that though both Parts One and Two of the SBS Inventory contained a large number of items describing peer-to-peer social behavior(s), to date only the preferences and responses of teachers have been assessed in relation to them.

Instrument Adaptation and Description

Equivalent child versions of the SBS Inventory and Correlates Checklist were developed by the senior author, designed to (a) assess behavioral skills/competencies judged by peers as being important to being liked in school; (b) identify noxious/maladaptive child behaviors that peers find objectionable, are indifferent to, or approve of; (c) generate peer estimates of the proportion of children who display these behavioral characteristics; (d) measure peer self-perceptions as to their ability in assisting others to learn and/or reduce these behaviors; and (e) identify pinpoints that would "not fit" or be suitable in a classroom setting (e.g., items from the Correlates Checklist). An attempt was made to preserve the content or core meaning of each item on the adult version of the SBS Inventory and Correlates Checklist in the adaptation process.

Readability levels for the items and instrument instructions approximate a fourth grade level for the student versions of the instruments.

The Student SBS Inventory. This instrument has the same three sections as the adult version. The student is asked to rate 56 item descriptions along a dimension of their importance to being liked by peers in school, and secondly, the proportion of peers who regularly display them. The first judgment asks the student to rate the behavioral skill or competency as very important, important, or not important to being liked by peers in school. The second judgment asks the student to estimate whether most, some, or few students in their school display this behavior.

Part Two of the instrument describes negative/maladaptive social behaviors and asks the student to indicate whether they don't like it, don't care, or like it when it occurs in school. Similarly, the student estimates whether most, some, or few students in school display the behavior described. Thus, results from Parts One and Two yield information on the importance of being liked, behavioral acceptability, and estimates of the general frequency or pervasiveness of the described behaviors among the students' school population as viewed from the students' perspective.

Part Three of the instrument asks the student to re-read each item in Parts One and Two and then indicate whether the student (a) could assist another student to learn or stop the behavior described; (b) would need help or training to assist another student to learn or stop the behavior in question; or (c) could not help another student, and professional personnel in the school would be needed to help the student to learn or stop the described behavior. Part Three thus provides an estimate of the technical assistance needs of students in helping other students to change the patterns of behavior described by the instrument. Part Three of the instrument provides particularly useful information in light of the dramatic increase of literature describing utilization of peers in treatment of academic deficiencies (Gerber & Kauffman, 1981), as models in social skills training and therapeutic intervention (Peck, Cooke, & Apolloni, 1981; Strain, Kerr, & Ragland, 1981), as peer trainers (Strain et al., 1981), and as behavior change agents (Greenwood, 1981).

The SBS Student Checklist. This instrument contains 26 items, and like the SBS Inventory, is a direct adaptation of the adult version. The first 24 items describe handicapping conditions such as drooling, problematic orthopedic conditions, visual impairments, behavioral/emotional impairments, and so on. The student is asked to mark the items describing conditions they think would be liked or would not fit into their classes. Item 25 queries the student as to whether provision of another adult in the classroom to assist a student with the conditions previously marked would change their mind regarding the handicapped student's acceptability. Item 26 asks the student to rate previously marked items as to whether their opinion could be changed by having someone available to teach them to understand and help a handicapped peer. The Student Correlates Checklist thus assesses peer opinions as to the kinds of handicapping conditions students would not tolerate occurring in a classroom setting and the type of adult technical assistance that would be necessary to change their opinion as to the appropriate placement in their classroom of a handicapped child manifesting these handicapping conditions.

Table 1 contains sample items and rating formats for the student SBS Inventory and Correlates Checklist. It should be noted that teachers and peers rated Section II items of the SBS Inventory on the same dimension of accepta-

TABLE 1

Sample Items and Rating Formats for the Student SBS Inventory and Correlates Checklist

	SBS Inventory						
	Section One	**Very Important**	**Important**	**Not Important**	**Most**	**Some**	**Few**
1.	Student uses scissors, paper, and pencils the right way	____	____	____	____	____	____
2.	Student tries to get teacher's attention at the right time	____	____	____	____	____	____
3.	Student copies the good behavior of other children	____	____	____	____	____	____
	Section Two	**Don't Like It**	**Don't Care**	**Like It**	**Most**	**Some**	**Few**
1.	Student whines	____	____	____	____	____	____
2.	* Student has tantrums (crying, screaming, kicking)	____	____	____	____	____	____
3.	Student bothers others when they are working	____	____	____	____	____	____
SBS Correlates Checklist					**Check (*)**		**Circle (0)**
1.	Child can't seem to stop moving						
2.	Child messes his/her pants						
3.	Child cannot speak well and is not understood without great effort						
4.	Child requires different learning materials to progress						

bility. However, in Section I teachers rated the adaptive items in terms of their importance to a successful classroom adjustment, while peers rated them as to their importance to being liked in school.

Walker, McConnell, Walker et al. (1983) and Walker, McConnell, and Clarke (in press) argue that handicapped children entering less restrictive settings are required to make two major social/behavioral judgments. That is, they must meet the receiving teacher's minimal behavioral requirements and expectations, and they must adjust to a new peer group consisting largely of nonhandicapped pupils. The adult versions of the SBS instruments provide information on the former and the child versions provide information on the behavioral requirements associated with the latter.

Initial Testing and Administration of the Instruments

Two school districts (one rural and one semi-rural suburban) in southeast Idaho agreed to participate in the study and consented to administration of the *SBS Inventory of Student Social Behavior Standards and Expectations* and the *Correlates Checklist*. Testing occurred during the 1981-82 school year.

Subjects. The study sample consisted of all students enrolled in grades 6, 7, and 8 in the two districts. Over 1300 students were tested. Six classrooms including 116 students (56 female/60 male) were randomly selected for retesting to assess stability of ratings over time.

Instrument Administration Procedures. A standardized format and procedure was used to administer the instruments to all students participating in the study. A 1350-word administration procedure was read and presented by the experimenter to each classroom of students completing the instruments.

The procedure dealt with purpose of the study, general rating instructions, joint reading/explanation of rating format definitions and instructions by students and the experimenter, completing one sample item in each section of the instruments, and answering student questions. Every effort was made to achieve a standardized administration of the instruments across classrooms and to ensure that all students understood rating directions. Copies of the instructions used in the administration procedure can be obtained for replication purposes from the senior author.

Reliability Assessments

As noted, 116 students across six classrooms in the study were assessed on two occasions for estimating the stability of ratings. All 116 students selected for retesting were tested initially in the latter 2 weeks of March 1982. Following a 5-week interval, the students were retested in the first 2 weeks of May 1982.

Students were tested by classrooms via the same examiners who had tested them on the first occasion, and using precisely the same administration directions as before. Students who were absent on one of the two testing occasions were dropped from the study. Test and retest time schedules were within one hour of each other.

RESULTS

The results of reliability analyses are presented in two levels for the instruments. Level One analyses focus on the *central text* of the SBS Inventory and Correlates Checklist. Level Two analyses focus on peripheral components of the instruments.

In Part One *central text* for the inventory consists of student ratings of the *importance* of the adaptive items to being liked by others and in Part Two, ratings of the *acceptability* of the maladaptive items listed. For the Correlates Checklist, *central text* was considered to be responses showing degrees of tolerance for the 24 listed handicapping conditions/characteristics. Level Two analyses of peripheral components were considered to be (a) frequency estimates by students in Parts One and Two of the Inventory, (b) technical assistance needs in Part Three of the Inventory, and (c) technical assistance needs on the Checklist.

Level One Analyses

Table 2 presents estimates of test-retest stability of responses to the SBS Inventory over a 5-week period. Correlations were computed betwen the first and second administrations for all subjects and by sex, age, and grade levels. Analyses were performed using the *Statistical Package for the Social Sciences* (2nd ed.; Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) on a Hewlett-Packard 3000 computer.

TABLE 2

Pearson Product Moment Correlation Coefficients for the SBS Inventory of Student Social Behavior Standards and Expectations Over a 5-week Test-Retest Interval

Variable	Number	Mean 1	Mean 2	S.D. 1	S.D. 2	r
All Subjects	116	167.16	169.86	24.21	27.89	0.56
Males	60	169.03	173.87	26.70	31.92	0.62
Females	56	165.16	165.57	21.75	22.29	0.44
Sixth Graders	42	166.52	161.79	21.96	24.70	0.54
Seventh Graders	34	171.21	173.27	28.93	26.63	0.48
Eighth Graders	40	164.40	175.56	22.79	30.64	0.71
11-Year-Olds	16	175.00	172.56	21.19	24.28	0.62
12-Year-Olds	36	160.92	157.53	24.25	24.68	0.39
13-Year-Olds	38	172.34	177.37	26.69	29.23	0.63
14+-Year-Olds	26	163.42	174.31	21.03	27.85	0.57

All test-retest correlations were statistically significant at or beyond the .01 level. Across all subjects the test-retest correlation was $r = .56$. The range of obtained correlations was from $r = .39$ to $r = .71$. The highest correlations were for eighth grade students ($r = .71$), for males ($r = .62$), and for 11- ($r = .62$) and 13-year-olds ($r = .63$). The lowest correlations were for females ($r = .44$) and 12-year-olds ($r = .39$).

Table 3 presents the same analyses for the SBS Correlates Checklist. As with the Inventory, all correlations were statistically significant at or beyond the .01 level. Across all subjects the overall correlation was $r = .59$. The range of correlations was from $r = .42$ to $r = .72$. The highest correlations obtained were

TABLE 3

Pearson Product Moment Correlation Coefficients for the SBS Student Correlates Checklist Over a 5-Week Test-Restest Interval

Variable	Number	Mean 1	Mean 2	S.D. 1	S.D. 2	r
All Subjects	116	13.16	12.57	4.86	4.60	0.59
Males	60	13.65	13.38	5.18	4.31	0.55
Females	56	12.63	11.70	4.47	4.78	0.64
Sixth Graders	42	13.24	12.48	5.18	4.52	0.55
Seventh Graders	34	14.59	14.00	3.92	4.50	0.55
Eighth Graders	40	11.85	11.45	4.98	4.56	0.61
11-Year-Olds	16	16.19	14.44	4.26	4.35	0.55
12-Year-Olds	36	12.69	11.83	5.18	4.61	0.54
13-Year-Olds	38	14.11	14.03	4.33	4.16	0.42
14+-Year-Olds	26	10.54	10.31	4.21	4.37	0.72

for 14-year-olds (r = .72) and females (r = .64). The lowest correlation (r = .42) was for 13-year-olds.

A measure of internal consistency was obtained for the SBS Inventory and Correlates Checklist via split-half correlational analysis of the *central text* for the first administration of the instruments. Table 4 presents results of this analysis by instrument. An apparent statistical artifact appears when a split-half analysis is conducted on both halves of the SBS Inventory combined. As a whole, the Spearman-Brown coefficient for all 107 items was low, but statistically significant (r = .47).

When each part of the Inventory is analyzed separately, however, the Spearman-Brown coefficients improve dramatically (e.g., Part I r = .92; Part II r = .87). The Spearman-Brown estimate for the Correlates Checklist was r = .81.

Level Two Analyses

Test-retest estimates were computed for the general frequency estimates that student respondents were asked to make on the Inventory (e.g., the proportion of students who engage in or exhibit the behavior). Table 5 presents results of this analysis. These results show evidence of considerable variation in the stability of students' frequency estimates over a 5-week period. Overall, the correlations are of a low magnitude and suggest that estimates of males and upper age/grade level students are slightly more stable than those of females and younger students. Only 5 of the 10 correlations computed were statistically significant at .01 or beyond.

Part Three of the student SBS Inventory focuses on technical assistance and asks student respondents if they could assist other students in (a) learning or acquiring adaptive behavioral competencies, and (b) stopping maladaptive social behaviors. Information from this section of the Inventory could be extremely valuable in the design of peer tutoring and therapeutic strategies. Table 6 presents test-retest estimates for this section of the instrument.

The obtained coefficients were r = .54 for all subjects and ranged from r = .20 to r = .73. Only one of the obtained correlations was *not* significant at the .01 level. The highest correlations were for eighth graders (r = .69), 14+-year-olds

TABLE 4

Split-Half Reliability Analysis for the SBS Inventory and Checklist

	Subject N	Item N	Mean	S.D.	r Between Forms	Spearman-Bowman	Guttman
SBS Student Inventory (whole test)	116	107	167.16	24.24	0.31	0.47	0.43
SBS Student Inventory (Part 1 only pro-social behaviors)	116	56	96.60	18.97	0.86	0.92	0.92
SBS Student Inventory (Part 2 only negative social behaviors)	116	51	72.70	10.81	0.77	0.87	0.87
SBS Student Checklist	116	24	13.16	4.86	0.67	0.81	0.76

TABLE 5

Pearson Product Moment Correlation Coefficients for Test-Retest Estimates of General Frequency on the SBS Student Inventory

Variable	Number	Mean 1	Mean 2	S.D. 1	S.D. 2	r
All Subjects	116	223.09	220.42	16.73	18.81	0.23*
Males	60	224.25	220.47	18.62	18.24	0.40*
Females	56	221.84	220.38	14.50	19.57	0.03
Sixth Graders	42	224.00	222.14	14.04	20.63	0.08
Seventh Graders	34	222.00	222.41	17.89	17.71	0.05
Eighth Graders	40	223.05	216.93	18.58	17.64	0.55*
11-Year-Olds	16	223.06	218.75	10.06	17.51	0.20
12-Year-Olds	36	223.83	223.03	14.31	21.73	0.14
13-Year-Olds	38	222.03	218.47	21.07	16.37	0.41*
14+-Year-Olds	26	223.62	220.69	16.74	19.20	0.49*

*Correlations significant at or beyond 0.01 level of confidence

TABLE 6

Pearson Product Moment Correlation Coefficients for Technical Assistance Scores on the SBS Student Inventory

Variable	Number	Mean 1	Mean 2	S.D. 1	S.D. 2	r
All Subjects	116	201.83	203.27	33.32	37.78	0.54
Males	60	197.55	205.60	35.58	39.73	0.62
Females	56	206.41	200.77	30.35	35.75	0.46
Sixth Graders	42	197.52	196.43	28.77	36.60	0.36
Seventh Graders	34	196.53	199.50	31.44	34.30	0.44
Eighth Graders	40	210.85	213.65	37.93	40.38	0.69
11-Year-Olds	16	196.75	197.38	30.15	47.49	0.20*
12-Year-Olds	36	199.00	199.72	29.87	30.84	0.47
13-Year-Olds	38	201.95	205.00	34.47	37.34	0.58
14*-Year-Olds	26	208.69	209.27	38.42	41.65	0.73

*Coefficient not significant at .01 level of confidence

(r = .73), and all males (r = .62). The lowest correlations were for 11-year-olds (r = .20) and sixth graders (r = .36).

The SBS Student Checklist also contains an assessment of two types of technical assistance to which students were asked to respond. The first type described the provision of another adult in the classroom setting for the specific purpose of taking care of the needs of a handicapped student, and the second type provided a person to directly teach all students to understand and assist a handicapped student. In each type of technical assistance, student respondents were asked if the provision of technical assistance would reduce their objections to a specific handicapping condition being represented in their classroom.

Table 7 contains test-retest correlations for each type of technical assistance on the SBS Student Correlates Checklist. For Type One technical assistance the correlation was $r = .41$ for all students and ranged from $r = .21$ to $r = .71$. For Type Two assistance the overall correlation was $r = .55$. Correlations ranged from $r = .30$ to $r = .71$. Five of the obtained correlations for Type One assistance were *not* significant at .01 and two did not reach this level for Type Two assistance.

DISCUSSION

The major focus of this program of research is to determine the social behavior expectations and demands of schoolage children as part of the study of ecological influences upon social behavior in school. In order to (a) develop a database of children's opinions on social behaviors and handicapping conditions,

TABLE 7

Pearson Product Moment Correlations for Test-Retest for Two Types of Technical Assistance on the SBS Student Checklist

Variable	Number	Mean 1	Mean 2	S.D. 1	S.D. 2	r
Type One Technical Assistance						
Adult in Classroom						
All Students	116	6.03	6.57	4.36	3.89	0.41
All Males	60	5.83	6.47	4.58	3.68	0.60
All Females	56	6.23	6.68	4.13	4.10	0.21*
Sixth Graders	42	6.45	6.98	4.52	3.82	0.42
Seventh Graders	34	5.68	7.44	4.79	4.11	0.29*
Eighth Graders	40	5.88	5.40	3.84	3.53	0.57
11-Year-Olds	16	6.19	7.25	4.05	2.86	0.53*
12-Year-Olds	36	6.67	7.22	4.81	4.38	0.33*
13-Year-Olds	38	5.37	6.40	4.26	3.68	0.33*
14+-Year-Olds	26	6.00	5.50	4.11	3.90	0.60
Type Two Technical Assistance						
Teach to Understand and Help						
All Students	116	4.67	4.60	3.98	3.72	0.55
All Males	60	4.37	4.10	4.00	3.97	0.66
All Females	56	5.00	5.14	3.97	3.37	0.41
Sixth Graders	42	5.81	5.33	4.64	4.98	0.69
Seventh Graders	34	4.38	5.15	3.93	4.04	0.30*
Eighth Graders	40	3.73	3.38	2.94	2.64	0.54
11-Year-Olds	16	6.13	5.25	3.78	3.46	0.44*
12-Year-Olds	36	5.31	5.17	4.79	4.07	0.71
13-Year-Olds	38	4.11	4.61	3.52	3.85	0.37
14+-Year-Olds	26	3.72	3.42	3.23	3.01	0.53

*Correlation not significant at .01 level of confidence

(b) develop further assessment and diagnostic instrumentation with social validation, and (c) develop statements about the demands of the ecosystem into which handicapped children may be integrated, it was necessary to create the equivalent child versions of the SBS Inventory and Correlates Checklist and to establish their psychometric characteristics. Instruments of this type make it possible to compare the social behavior standards and expectations of teachers and children in their class and can be used as vehicles to research other variables as well.

However, in order to achieve these goals, such instruments must demonstrate acceptable psychometric characteristics. Standards for judging the adequacy of child respondent instruments have not been clearly delineated in the literature.

The adult versions of the SBS instruments consistently yield test-retest correlations (5- to 6-week interval) in the 80s and split-half estimates in the high 80s and low 90s. Split-half estimates for Parts One and Two of the Student SBS Inventory and for the Correlates Checklist were quite acceptable when using standards for judging instruments designed for adults.

Test-retest correlations were in the moderate range, but well below the .80 standard commonly reserved for instruments completed by adults. Stability estimates generally ranged from the 30s to low 70s.

This outcome can be accounted for in at least two ways. First, revision of the SBS instruments in order to create child versions may have produced less clarity within them. A more likely explanation may be that children are generally less stable than adults in responding to instruments of this type. Support for this explanation is provided by the general trend for higher test-retest correlations to be associated with students in the upper age/grade levels. Data which have been collected to extend the database to ninth and tenth graders, but which have not been completely analyzed as yet, indicate a continuation of the trend established by this database.

Test-retest reliabilities for the frequency estimates section of the SBS Student Inventory were quite low. It may be that students do not have the information or knowledge base to make such judgments either reliably or accurately. Frequency estimates of this type by adults usually bear only a low to moderate relationship to accuracy measures (e.g., direct observations) used to verify them (Schaefer, in press). It appears that this variable may have only limited utility in research using these instruments and has been dropped in succeeding data collection efforts.

Of particular interest to the authors are social validation ratings by children of the behavioral competencies and unacceptable social behaviors judged to contribute, respectively, to adjustment and maladjustment in the school setting. Although some research has been conducted on the empirical identification of social responses that discriminate between competent and less competent students (Foster & Ritchey, 1979; Gottman, Gonso, & Rasmussen, 1975), very little information is currently available on peer judgments regarding the behavioral requirements for social competence and adjustment. This information and results will be described in future reports and should be of significant value in validating the content of social skills assessment instruments and training programs.

The most and least preferred item profiles that can be identified by sex and grade level for schoolage populations on these instruments may be important correlates of sociometric status. Child ratings of each other on such items may provide an important research vehicle for further identifying behavioral correlates of popularity and social competence. The authors plan to pursue this line of research in the future.

The database has been extended to ninth and tenth grade populations. The information gained from future analyses of such data should indicate (a) if there exist any discernible differences between sexes as to the importance of social behaviors that comprise behavioral standards; (b) if there exist any discernible trends in the importance of certain social behaviors which are related to developmental factors such as increasing age and social maturity; (c) if there exist differences as to the importance of adaptive and maladaptive social behaviors between children and teachers; and (d) if there exist differences between urban and rural populations, between different social/economic groups, and between handicapped and nonhandicapped populations in response to the instruments. This data will most certainly lead to the development of instrumentation which is socially validated and diagnostically relevant for use in schools.

A limitation of the present study is that its results can only be generalized to rural and semi-rural samples. The study should be replicated with both suburban and urban samples before results can be generalized broadly. It is hoped that the psychometric characteristics, information yield, and potential uses of the instruments will be of sufficient interest and acceptability to stimulate such efforts by other researchers.

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Characteristics of Extended Programs for Autistic Students

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ABSTRACT

In Texas, autism is identified as a condition separate from other handicapping conditions. Recently, the Texas Education Agency has adopted regulations requiring that public schools address extended programs in the Individualized Education Plan for each autistic student. The present study describes the current status of extended programs through a survey of 185 directors of special education school districts and cooperatives in Texas. Of these directors 103 reported having one or more autistic students enrolled in school, resulting in a total of 368 autistic students — 50 autistic students (14%) were attending an extended day program and 297 (81%) had received or would receive an extended year program. The most frequently reported extended year program ran for 6 hours a day for 4 weeks, but there was a wide variety of time allotted for extended year programs, ranging from 2 to 8 hours a day and from 2 to 12 weeks during the summer. Data are presented regarding objectives for the extended year programs, perceived effectiveness, parent training, and teacher training.

The right of the severely mentally retarded, emotionally handicapped, and autistic to an extended program has been established through the federal courts (Stainback, Stainback, & Hatcher, 1983). In *Armstrong v. Kline* (1979), for example, the plaintiffs alleged that the Pennsylvania Department of Education's policy of a 180-day school year violated their right to a free appropriate education under PL 94-142. The United States District Court for the Eastern District of Pennsylvania ruled for the plaintiffs holding that the 180-day policy was illegal. They also held that the terms *free appropriate* should be interpreted to mean that the child's individual needs must be considered and that the 180-day rule denied the handicapped a free appropriate education. The defendants appealed the case to the Third Circuit Court of Appeals which upheld the ruling by the lower court in *Battle v. Commonwealth* (1980). The Supreme Court refused to hear the case (ST2Scanlon v. Battle, 1981), thus upholding the decision in *Battle v. Commonwealth* 1980).

These and other rulings underscore the need and pressure for an extended program for severely handicapped students if the best professional opinion available determines that an extended program is necessary to avoid a significant regression-recoupment problem or to reach realistic educational goals. Consequently, states and local school districts have been pressed to develop policy regarding the identification of severely handicapped students who require extended programs and the types of programs appropriate for times extending beyond the typical school day or school year (Kabler, Stephens, & Rinaldi, 1983; Larsen, Goodman, & Glean, 1981; Stainback, Stainback, & Hatcher, 1983). Unfortunately, sufficient research is not available to assist the policymakers. Little is known regarding the long-term effect of interruptions in programing for the severely handicapped (Stainback, Stainback, & Hatcher, 1983), the resources available in the absence of an extended program in the schools, the differential effect of extended programs on handicapped students who vary in potential, or even the general benefits of extended programs for the severely handicapped (Edgar, Spence, & Kenowitz, 1977; McMahon, 1983). Very few published reports specifically address extended programs for autistic students (Hung & Thelander, 1978).

The Texas Education Agency has responded to the need to develop policy regarding extended programs by adopting rules which require that the autistic student's Individualized Education Program (IEP) addresses extended educational programing and that "in-home training or viable alternatives" and "parent training" be considered as well. It is up to the local school admission-review-dismissal committee to decide whether or not an autistic student needs an extended program and if so, the nature of the program itself. A preliminary survey of various states conducted by the authors suggests that many other states do not have a specific policy regarding extended programs for autistic students but rather, depend upon the IEP to determine policy. Consequently, in those districts which resist providing extended programing, policy develops as a result of hearings and litigation initiated by advocates of autistic students.

States and school districts who are in the process of planning extended programs for autistic students would benefit from knowing about what is being done regarding extended programs. The purpose of this paper is to describe what is happening in Texas.

PROCEDURES AND RESULTS

A survey instrument was mailed to 358 Texas public school directors of special education. Since some of the questions were somewhat sensitive and answers might suggest noncompliance to state rules, the questionnaire did not require identification of the school district or special education cooperative. Therefore, it was not possible to increase the percentage of response through follow-up. In spite of this problem, 185 directors responded to the questionnaire (52%). This return was somewhat low but not surprising due to the sensitive nature of the issue. An argument for the representativeness of the sample may be made, however, considering that 103 of the directors reported a total of 368 autistic students enrolled in special education programs. The Texas Education Agency records for the 1983-1984 school year listed a total of 392 identified autistic students. It is likely that most of the directors of special education who did not complete the questionnaire were those without identified autistic students.

The questionnaire consisted of questions regarding extended programs for autistic students. An extended program was defined as either an extended *day* (a program that lasts longer than the typical school day) or an extended *year* (a program that lasts longer than the typical school year), or both. the respondents reported the number of autistic students identified in their district or cooperative and the number receiving extended day and/or extended year programs. They also reported the time spent in extended year programs, the objectives of extended year programs, and their perception of the effectiveness of the programs. Some responded to an invitation to write comments about their recommendations for extended programs and for teacher training. Specific criteria for judging program effectiveness were not given. The directors were instructed to make judgments based upon their formal or informal evaluation of the program.

Extended Day versus Extended Year

The majority of directors reporting the enrollment of autistic students indicated that the IEPs addressed the need for an extended year program (75%), but a minority addressed the need for an extended day program (39%). Overall, 50 (14%) autistic students were receiving an extended day program while 297 (81%) had received or would receive an extended year program. There were no data which assisted in determining the characteristics which differentiated the extended year decisions. However, the general impression is that the two main determiners are the school district's willingness to provide an extended year program and the parent's willingness to accept it.

How Long is the Typical Extended Year Program?

Table 1 shows the variety of times reported regarding the duration of extended year programs. The most frequently reported extended year program was found to run 6 hours a day for 4 weeks during the summer (*n* = 10 programs). The majority of the programs (*n* = 57%) lasted between 4 and 8 weeks and ran 4 to 6 hours a day. The six programs reporting a duration of more than 8 hours a day for 12 weeks during the summer were those indicating that they contracted their autistic students to other agencies for residential treatment. In Texas, there are approximately 12 weeks available for extended year programs during the summer months.

Parent Training

In Texas, parent training must be addressed in the IEP but it is up to the IEP committee whether or not parent training is required. Mostly, parent training is

TABLE 1

Length of Extended Year Programs as Indicated by Directors of Special Education in Texas Public Schools (n = 72)

Number of Weeks	Number of Hours Per Day								
During Summer	1	2	3	4	5	6	7	8	8+
1									
2						1*			
3									
4			2	3	2	10			
5				2					
6			4	2	2	7	1	1	
7			1	2	1	2			
8			3		1	7	2		
9						1			
10						2	1		
11									
12		1		1		3	1		6**

*The numbers indicate the frequency of choices for length of extended programs.

**6 special education directors reported their autistic students are contracted to other agencies for residential treatment.

optional. Almost all of the directors of special education reported that parent training is included in their overall program for autistic students either within the regular school year, the extended day, or the extended year. The directors reported the methods of parent training by checking one or more types, and writing in additional training methods. Of those selected, modeling and practice was the most commonly used approach, followed closely by offering reading materials, providing group presentations, and arranging for an in-home consultant. Other methods included using either direct observation in the classroom or video recordings to illustrate training procedures to parents. Some directors reported using individual conferences, visits to other settings, newsletters, sign language classes, and written lessons for parents. Unfortunately, the percentage of parents actually involved in parent training is unknown.

Objectives for Extended Programs

The questionnaire listed 5 commonly reported objectives for extended programs (Kabler, Stephens, & Rinaldi, 1983; Larsen, Goodman, & Glean, 1981). The directors checked the ones included in their programs, wrote in additional objectives, and then ranked the 5 objectives according to their perceived importance. The results are presented in Table 2. The maintenance of skills and appropriate behavior are among the most frequently cited objectives of extended year programs, and they are also perceived to be of medium to high importance. Increasing skills and providing recreational and socialization experiences are perceived to be less important but are often included among the objectives. Some directors wrote in other objectives which included the following: (a) to increase generalization to other settings, and (b) to provide respite care. More detailed information was not collected. It is not known if there are differential priorities between daily living skills and communication skills. The term *appropriate behavior* referred primarily to compliance.

TABLE 2

Reported Use and Perceived Importance of Objectives for Extended Programs

Objectives	Reported Use		Perceived Importance	
	f	Rank	M	Rank
To maintain skills	66*	2	2.64**	3
To maintain appropriate behavior	69	1	1.76	1
To increase skills	44	5	3.80	4
To increase appropriate behavior	53	4	2.55	2
To provide recreational and socialization experiences	55	3	3.96	5

*66 directors of special education reported "to maintain skills" as an objective of their extended year program.

**The mean perceived importance was derived by adding all of the assigned ranks from 1 (high priority) to 5 (low priority) and dividing by the total for each objective.

Perceived Effectiveness of Extended Programs

The directors responded to a series of questions regarding the evaluation of their extended programs. Most (77%) indicated they do evaluate their extended programs. Direct observation is the most frequent means of evaluation (73%), followed by verbal or written report (70%), rating scales (38%), informal tests (18%), and standardized tests (10%). Written comments indicated that some directors evaluate the effectiveness of extended programs for the individual student during the review meeting of the admission-review-dismissal committee using information reported by various sources. Some also commented that they keep daily behavior charts for evaluation purposes. The most common time to evaluate is at the end of the extended program (49%), followed by a daily, continuous progress evaluation (28%) and a weekly evaluation (16%). Of the 69 respondents 55 (80%) reported that their extended programs were either very or moderately effective in meeting objectives. No information was collected regarding the reliability or validity of the measures used by the directors to determine program effectiveness. Although an evaluation could assist program planning and improvement, it is likely that directors are presently concerned about issues that they consider more pressing, such as finding personnel who are adequately trained to work in summer programs.

Teacher Training

The majority of the directors reported that their extended program personnel are appropriately trained for their job (86%), but most commented that they used consultants to train their personnel or to work directly with autistic students and their parents. Several noted the need for additional training through local universities, education service centers, and other state agencies. Recommendations for teacher training were categorized into content and method statements. The directors recommended that training include more information about parent training, behavior management, sign language, social skills training, and curriculum development. The directors clearly prefer practical, on-the-job, hands-on training experiences as opposed to typical lecture-oriented training. A specific focus on teaching autistic students was also recommended for selected personnel through inservice training, summer workshops, and conferences. Some recommended the use of "in-basket" exercises, opportunity to observe other programs, and additional training for teachers of the severely/profoundly handicapped as well as teachers of autistic students.

DISCUSSION

Using the prevalence estimate (2 to 4 per 10,000) of the DSM-III (American Psychological Association, 1980) and a Texas Education Agency 1983-1984 Statistical Brief, the expected number of autistic students in Texas public schools would be between 600 and 1,200 students. In 1983-1984 Texas public schools reported to the Texas Education Agency only 392 autistic students. Using the higher expectancy figure (1,200), it appears that only about one-third of the expected number of autistic students were identified as being in the public schools. Some of the reasons why this may be so include the possibility that prevalence estimates are erroneous and that autism is even less common than indicated (quite rare); or more likely, autism may be diagnosed as other conditions (mental retardation, severely/profoundly handicapped, emotionally disturbed, other health impaired, etc.). Also, although figures are not available to support this premise, some autistic students may not be in public facilities, or public school personnel may prefer not to identify a student as autistic since state rules dictate that the IEP address extended programs, in-home training, and parent training. Nevertheless, the present survey suggests that the majority (81%) of identified autistic students in public schools in Texas are receiving some type of extended program.

At this point the legal basis for providing extended programs seems clear. However, empirical data are needed to assist in addressing various issues related to extended programs. In an extensive review of the literature, Kabler, Stephens, and Rinaldi (1983) reported evidence of gain at the end of summer programs for children with various handicapping conditions, but their review failed to document skill loss due to interruption of schooling during the summer months, recoupment time when school resumes, and the long-term effects of summer programs on subsequent school years. To assist in answering these types of questions, Edgar, Spence, and Kenowitz (1977) recommended summarizing data at the following intervals: (a) at the end of the regular school year, (b) at the end of the summer program, (c) at the beginning of the subsequent school year, and (d) at the end of the subsequent school year. As noted by Edgar and his colleagues the most important information concerning the efficacy of extended programs will be gained by comparing student progress at the end of the subsequent school year. Stainback, Stainback, and Hatcher (1983) raise three additional questions that appear crucial. These questions call for research that addresses the nature and extent of the regression-recoupment problem among severely handicapped students, the amount of nonprograming time that can generally elapse before significant skill regression begins, and reliable criteria for identificaiton of students needing extended year programing prior to their experiencing a severe regression.

The present study does not purport to evaluate the efficacy of extended programs for autistic students, but rather, to describe the current status of the implementation of extended programs for autistic students in a state which identifies the autistic as a separate category from those with other handicapping conditions, and requires that school districts address extended programs for autistic students in the IEP. Since court decisions are resulting in rulings supporting extended programs, other states are likely to begin taking a closer look at their own practices and will be interested in what others are doing. The present data suggest that extended programs (particularly extended year) are available in Texas.

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Developing Counseling Skills in Teachers of Behaviorally Disordered Adolescents

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ABSTRACT

Behaviorally disordered adolescents often exhibit profound interpersonal deficits. Recently educators have become more aware of the role of social skills training in developing successful interpersonal adjustment for these adolescents. As more attention is directed towards the analysis and training of social skills, it becomes evident that acquiring these skills involves addressing cognitive and affective as well as behavioral factors. This is reflected in recent efforts to develop and increase individuals awareness and coping skills in these three domains. Many counseling strategies form the basis of these social skills training programs. It appears important for teachers to increase their understanding of counseling strategies. This may, in turn, improve the effectiveness of social skills training programs for behaviorally disordered adolescents. Also, using counseling strategies may facilitate improvements in student-teacher communication while contributing to an environment which is conducive to teaching social skills. The purpose of this paper is to present counseling techniques which address the behavioral, cognitive, and affective components involved in acquiring social skills which teachers can implement in the classroom.

Teachers involved in the treatment of behaviorally disordered adolescents must deal with a wide range of social and emotional adjustment difficulties. While teachers have successfully used behavioral interventions to remediate these difficulties, serious questions have been raised as to whether the positive effects of these interventions generalize from one treatment setting to other environments (Kennedy, 1982; Shamsie, 1981). One reason for the lack of generalization is because many behaviorally disordered students lack the social skills in producing and using socially competent behaviors (e.g., Bandura, 1978; Shamsie, 1981). This response-deficit theory has stimulated the development of social-skills training programs for adolescents in psychiatric settings (Bornstein, Bellack, & Hersen, 1980; Edler, Edelstein, & Narick, 1979) and in the schools (e.g., Filipzcak, Archer, & Friedman, 1980). While these interventions have resulted in increases in social skills, they have also produced considerable variability in responses to treatment (e.g., Bornstein et al., 1980). This variability may suggest that emotional and adjustment difficulties of at least some students have sources other than deficits in overt behavioral skills (Kennedy, 1982).

In response to the limited generalization of many behavioral interventions, increasing emphasis has been placed upon the students' cognitions and affects which accompany behavior (e.g., Meichenbaum, 1975). This has resulted in the development of programs which incorporate all three domains. For example, Wood (1982) noted that educational programs for increasing social competence can be classified into two areas: (a) affective awareness which emphasizes thoughts, feelings, and interpersonal relationships; and (b) social skills training where experiences are planned that will teach students behaviors that can be used when appropriate to secure positive interpersonal consequences while avoiding aversive consequences. The first area seems to follow a more humanistic and preventative direction, while the second follows the direction of applied behavior analysis and remediation. In reality, the two areas overlap a great deal (Wood, 1982). Also, these programs appear based largely on counseling techniques. For example, Goldstein, Sprafkin, Gershaw, and Klein (1980) combined four elements for teaching social skills: modeling, role playing, performance feedback, and transfer of training. Role playing and performance feedback have affective and cognitive as well as behavioral components which are commonly used in client-centered (Rogers, 1951), Gestalt (Perls, 1969), and rational-emotive (Ellis, 1962) therapies. It often becomes difficult to separate affective educational programs from social skills training programs.

Regardless of the overlap often encountered between affective techniques and social skills training, these programs in general tend to teach socially appropriate behaviors, increase awareness and expression of feelings and how they effect behavior, and provide cognitive coping strategies. It would appear beneficial for teachers to increase their understanding of counseling strategies which underlie many of these programs. This may in turn increase their effectiveness as well as promoting a classroom environment more conducive for producing behavioral change in behaviorally disordered adolescents.

The purpose of this paper is to integrate these three domains to provide a counseling approach that teachers can use to help behaviorally disordered adolescents become emotionally and cognitively aware of their responsibilities and choices, and to see this awareness translated into socially appropriate behaviors. This approach incorporates aspects of a number of social skills programs which teachers can use to develop counseling skills to motivate, understand, involve, and manage behaviorally disordered adolescents. Therefore, the affective strategies of Client-centered therapy (Rogers, 1951) and Gestalt (Perls, 1969) therapy will be discussed first. Second, cognitive-behavioral approaches will be presented including Rational-emotive therapy (Ellis, 1962) and Reality therapy (Glasser, 1965). Third, psychodynamic principles will be addressed which may often effect the expression of antisocial behavior. This knowledge can lead to the development of appropriate behavioral interventions for modifying antisocial behavior. These counseling strategies will be presented within a behavioral framework which provides an objective basis for identifying antisocial behaviors and evaluating the effectiveness of interventions.

AFFECTIVE STRATEGIES

Pattavina (1983) has suggested that adolescents' affective competencies are critical variables in the learning process. For example, Pattavina and Gotts (1979) indicated that the more frequently, chronically, and intensely adolescents' affective functioning conflicts with learning, the more likely it is that they will subsequently become further characterized by academic retardation, limited intellectual development, and be inadequately prepared for adult adjustment (Gallagher & Harris, 1976; Morse, 1977). More attention is being placed on the adjustment difficulties which often arise from adolescents' affective incompetencies. For example, Brendtro (1980) suggested that teacher-student relationships are an extremely important factor in the instructional process because they improve the chances for effective communication and learning, as well as improve the value of teacher reinforcements. In addition, others have urged that interpersonal qualities (Frank, 1979) and relationships (Morse, 1979) are more important variables than the technique one uses to influence an individual's social or emotional adjustment.

Though individual teachers vary in the way they relate to students, there appear to be a number of relationship building strategies that can be developed through training (Matarazzo, 1978). Affective messages are communicated verbally, nonverbally, and through verbal intonations (Izard, 1977). These stem from Roger's (1951) view that teachers need three basic qualities to create a sound learning environment: (a) realness or genuineness, (b) an attitude of acceptance and trust, and (c) empathy and understanding. Similarly, Aspy and Roebuck (1979) suggested that affective teaching skills fall in one of three general categories of functioning; empathy, congruence, and positive self-regard.

Client-Centered Approach

A primary strategy that teachers have to facilitate communication is based upon the Client-centered approach developed by Carl Rogers. Rogers (1951) developed this approach from a belief that if people experience genuine positive regard, they will respond similarly. The teacher by communicating empathy, honesty, and acceptance of the student is able to promote a relatively nonthreatening climate which facilitates the students' abilities to examine their own feelings, thoughts, and behavior.

Reflective listening is the technique associated with this approach which consists of reflecting back to the student their own words and feelings to increase their self-awareness. Reflective listening implies that the teacher be able to reflect, clarify, and interpret students' verbal or nonverbal behavior. This technique can facilitate the development of rapport between student and teacher by communicating to students the teacher's willingness to listen to student problems. This technique is beneficial when working with behaviorally disordered adolescents who often exhibit poor social skills due to their impulsivity (Strain, 1982). Impulsivity often leads to increased arguments and poor peer interactions because it interferes with the student's ability to listen and respond to available social and environmental cues (Douglas, 1974). However, training students to initiate and respond to reflective listening allows them to slow down the rate they perceive incoming stimuli, thereby allowing them time to respond to the many cues in social situations.

Impulsivity often results in aggression (Robin, Schneider, & Dolnick, 1976) due in part to the behaviorally disordered adolescents' inability to attend to the relevant responses of others before developing a course of action (Cantwell, 1975). Reflective listening can help to facilitate an atmosphere conducive for exploring with the student the nature of his/her aggressive behavior. For example, the initial response of some teachers when dealing with aggressive situations may be to assign "blame" to the student rather than themselves. A teacher's typical response to the student is frequently, "Why were you fighting? Don't you know that it's wrong to fight?" This response generally implies to the student that the teacher is being judgmental and thus is associated with punitive action. This might result in placing the student on the defensive, thereby shutting down any possible channels of communication. However, an initial response using reflective listening might be, "Please tell me what happened." This statement does not imply blame and conveys to the student that teacher's willingness to hear his/her side of the incident. The student might then go on to explain that the other student was teasing him/her. An appropriate reflective listening response might now be, "Sounds like you get really angry or feel embarrassed when other kids make fun of you." Communication has been developed in a nonjudgmental manner. Then the preestablished consequences for fighting can be imposed. It is important to note that the preestablished consequences can take on the judgmental aspect of this process, not teachers themselves. The teacher remains free to listen and provide support and concern to the student.

Reflective listening is also useful in diffusing a fight before it escalates by paraphrasing and reflecting back to students the content and feelings of their verbal and nonverbal messages. An exercise for training students in paraphrasing is to have two students sit back to back and have one student make a brief statement. The other student then repeats it in his/her own words. Other students, as observers, decide if the second student has accurately repeated the meaning of the statement. The teacher can generalize this skill by helping the students use it when they are in conflicts or other difficult situations.

Gestalt Approach

Fritz Perls' (1969) Gestalt therapy is based upon his belief that increased awareness of one's feelings will contribute to increased control over one's behavior because awareness often releases blocked feelings that effect behavior. Like Client-centered techniques, this approach is phenomenological in that it focuses on the present from the student's perspective. Although reflective listening reflects back a student's verbal and nonverbal behavior, the Gestalt approach adds techniques for increasing the awareness of blocked feelings.

One of the exercises commonly employed in Gestalt therapy is the "empty chair" technique in which a dialogue is held between two aspects of the individual, such as the positive and negative ways a student deals with conflict. Another sort of dialogue might be held between the student and another person not present with whom the student may have some unfinished business. This sort of role playing allows students to explore their feelings in a safe environment. Students might then access this awareness in more stressful situations where displaying alternative behaviors would be more desirable. In the example of the student fighting, an end of the day wrap-up or sharing session in which the teacher has the student engage in an imaginary dialogue with the other child can be helpful for developing alternatives for fighting while helping the child understand his/her feelings about the incident.

Another way to increase positive communication between teacher and student is for the teacher to label the feeling content. This is consistent with the Gestalt approach in that it moves the student out of the cognitive realm and into the affective. Students tend to avoid acknowledging the feelings that accompany conflict or intimacy (friendship). By labeling the feelings, the teacher acknowledges them and increases the safety of the situation which allows the student to also accept these feelings. An example of this might be when a student refuses to do an assignment and begins to tear it up. Students generally insist that the assignment is "stupid" and they don't "need" to know that anyway. Here the technique of labeling the feeling state overlaps with an awareness of psychodynamic principles. The student might be experiencing frustration, anger, and some fear at not being able to complete the assignment. A facilitating response might be "Right now you seem very frustrated. What else is going on with you now?" By labeling the feeling and following it in an open-ended question, the teacher has opened the interaction up to include more variables than the consequences for tearing up an assignment.

Other Gestalt techniques involve the use of imagery and sensory awareness to help students focus on the relationship between their verbal and nonverbal behavior. For example, the teacher might say to the student who was fighting, "You say you are angry, yet you are smiling." Another technique involves asking the student to act out playing the roles of animate or inanimate objects. This might be an appropriate activity for a wrap-up or sharing session. By requiring students to fantasize and imagine themselves as something else, such as an animal, they are provided with a safe way of experiencing and expressing new or different feelings. A final Gestalt technique involves having students repeat and exaggerate verbal and nonverbal behaviors such as a clenched fist or a leg swing to increase their awareness of their behavior. For example, the teacher might say to a student, "Can you stay with that feeling? Exaggerate your leg swing while you clench and unclench your hands and repeat what you just said in a louder voice . . . louder . . . louder."

Gestalt techniques are particularly effective for students who lack awareness of the *how* and *what* of their present behavior, students who refuse to take responsibility for their behavior, and students who interact rigidly and in a ritualized manner with their environment. Gestalt techniques employed in special education classrooms appear to work best with withdrawn, socially isolated students. The exaggeration of verbal and nonverbal behavior often increases withdrawn students' ability to interact with their peers.

Cognitive-Behavioral Strategies

Behavioral interventions and the principles of applied behavior analysis are essential in developing classroom control and facilitating students assuming responsibility for their behavior. However, a problem apparent in much of the applied behavior analysis literature is the absence of generalization of behavior change once interventions are terminated (Stokes & Baer, 1977). In a review of behavioral interventions with antisocial adolescents, Romig (1978) noted that, although behavioral techniques were effective in modifying or reducing targeted antisocial behavior, generalization and maintenance of treatment gains were minimal.

In response to the limited generalization of many behavioral interventions, Meichenbaum (1975) developed a cognitive behavior modification where emphasis is placed upon identifying the cognitions and emotions which accompany behavior. The basis of this approach stems from Miechenbaum and Goodman's (1969) interest in the learning styles of young children who tended to "talk" themselves through a new skill. As the children's skill levels increased, their verbalizations decreased. To study this, these investigators taught kindergarten children motor skills such as skipping. One group was encouraged to verbalize the process while the other group was discouraged from verbalizing during the activity. Results indicated that the group which verbalized the sequence did significantly better on the motor skill task. These results have generated a growing body of research suggesting that cognitive repertoires involving language (e.g., self-statements, attributions, appraisals) influence behavioral outcomes. For example, Beck (1976) constructed a cognitive therapy which was effective in helping individuals learn to use objective evidence as the basis of responding rather than biased assumptions and misconceptions. Goldfried, Decenteceo, and Weinberg (1974) have taught individuals that self-generated propositions that imply "shoulds" and "oughts" are generally invalid, irrational, or paralogical self-statements and therefore are maladaptive ways of interpreting environmental stimuli. Meichenbaum (1975) found that the result of changing one's maladaptive self-statements is that the organization of the original schema, or general rule structure that resulted in maladaptive cognitions is also modified. Hence, subsequent cognitions, in response to formally problematic situations, are also reorganized.

It appears likely that cognition has an effect upon behaviors and that verbal mediation can be used to teach socially appropriate behaviors to behaviorally disordered students as well as remediating a wide variety of maladaptive behavior. For example, cognitive-behavioral interventions designed to increase social competence among children have included such training programs as cognitive appraisals (Block, 1978), situation interpretation (Snyder & White, 1979), alternative thinking (Zahavi & Asher, 1978) and think aloud (Camp & Bash, 1978). Schlichter and Horan (1981) have suggested that the diverse array of cognitive-behavioral interventions can be condensed into a three-phase stress inoculation paradigm first developed by Meichenbaum (1975). Stress inoculation therapy consists of developing the student's affective, cognitive, and behavioral coping skills and then providing for practice of these skills with exposure to regulated doses of stressors that arouse but do not overwhelm the student's defenses.

Initial results of cognitive-behavioral interventions have demonstrated generalization of treatment gains from the treatment setting to other environments (Block, 1978). However, generalization appears limited to programs for adolescents (Camp & Bash, 1978; Kendall & Finch, 1978). One possible source of the apparently greater difficulties in obtaining generalization with younger children is that they have more limited cognitive capacities than adolescents (Kendall & Finch, 1978; Morris & Cohen, 1982; Schleser & Thackuray, 1982).

Rational-Emotive Approach

Meichenbaum (1975) noted that the most popular method of modifying self-statements is through the use of Rational Emotive Therapy (RET), developed from the work of Albert Ellis (1962). The major strategy of RET is to "attack" students' belief systems in order to help them perceive the irrationality of their beliefs and the role of such beliefs in emotional arousal. Students are then taught to analyze objectively, challenge, and replace the maladaptive belief system with a system more consistent with logical and objective reality. Goldfried et al. (1974) presented a modified version of RET, called Systematic Rational Restructuring, that provides a more structured method of changing maladaptive self-statements. This attempt at systematizing RET was made in order to streamline the therapy procedure, as well as to fit RET processes into a behavioral framework. Essentially, rational restructuring consists of developing hierarchies of the problematic situations. Progress through the hierarchies is systematic, and students are never faced with an overwhelming task with which they are unable to cope. Other characteristics of RET, such as the didactic elements of therapy and homework practice, are also part of rational restructuring.

Rational restructuring has been found to be at least as effective as pharmacotherapy (Rush, Beck, Kovacs, & Hollon, 1977) and behavior therapy (Rush, Khatami, & Beck, 1975; Taylor & Marshall, 1977; Vasta, 1976) in treating depression. RET has also been found to be effective for anxiety management (Deffenbacher & Hahnloser, 1981; Fremouw & Zitter, 1978; Hussian & Lawrence, 1978; Weissberg, 1975) and aggression (Hamberger & Lohr, 1980; Novaco, 1976; Schlichter & Horan, 1981). The bulk of the data thus far suggests that providing a different manner of language-based cognitive appraisal of a noxious situation is most effective in reduction of emotional stress reactions (Hamberger & Lohr, 1984).

Rational-emotive therapy is well-suited for special educators because it involves a teaching approach to counseling. By instructing, giving information, and assigning homework, the teacher helps change the student's belief system. Thus, the technique is both cognitive (teaching), and behavioral (role playing, homework assignments). For example, a student may engage in "acting-out" behaviors whenever presented with an algebra test. According to rational-emotive theory, the test represents (A) an event or experience the child has. If the student holds the belief (B) that he/she is stupid, the resulting consequences (C) might be ripping up the test or engaging in other inappropriate behaviors in order to escape the situation. Since the belief system is generally represented by the student's self-talk, one way to help the child change the belief is to have students keep a log of their self-talk. After a pattern has been established, the teacher can then teach the student to substitute positive self-statements to log down and use instead. Negative self-statements can also be addressed by teaching the student to use *thought-stopping*, a technique in which the student visualizes a stop sign or thinks "stop" whenever the negative self-talk begins. Thought-stopping was developed by Wolpe (1973) and has been used successfully in treating some aggressive adolescents (McCullough, Huntsinger, & Nay, 1977).

Rational-emotive therapy techniques call for teachers to recognize the overlapping relationship of reason and emotion; to encourage student responsibility for their own actions; and use a methodology that clarifies the relationship between feelings, thoughts, and behavior. The premise of RET is that irrational beliefs result in dysfunctional behavior, and the goal of therapy is to point out irrational beliefs and translate this awareness into behavioral change.

Beck (1970) and Lazarus (1971) added to Ellis' compendium of illogical thoughts that lead to problems in school by introducing cognitive restructuring. Cognitive restructuring is a generic name for strategies used to disperse maladaptive thoughts and to substitute adaptive thoughts in their place. Mahoney (1973) coined the term *cognitive ecology*, that is, "cleaning up what you say to yourself." Self-defeating thoughts and excuses offered by students such as "I'll never be able to learn algebra" or "I really blew that test" might be directly challenged by the teacher. An example following a cognitive restructuring format would be to have a student write down (A) situations where they hold the (B) belief that they are stupid and (C) replace these thoughts with positive coping statements.

The effectiveness of these procedures depends upon student and teacher willingness to see that "homework assignments" are carried through. This often calls for teachers to use reflective-listening techniques to help students identify aversive or stressful situations, replace negative self-statements with positive coping statements, and provide students with practice using these skills. Although it requires some knowledge and practice with counseling techniques, Horan (1979) has noted that some highly prevalent, learned illogical thoughts seem to precede a variety of maladaptive behaviors and that direct verbal confrontation of students' illogical beliefs combined with homework assignments and practice are effective in increasing students' social competence. For example, Cartledge and Milburn (1978) found that students who were able to ask questions, seek out the teachers, ask for their input, answer or attempt to answer questions, look at and smile at the teacher, and carry on conversations generally experienced greater academic success across a wider range of situations and settings than students unable to perform these behaviors.

Reality Therapy Approach

Another type of cognitive-behavioral approach which teachers can use is Reality Therapy (Glasser, 1965). Reality therapy is a procedure for exploring the student's values and behavioral choices, exposing inconsistencies, and enforcing students' responsibility for their choices. The goal of reality therapy is to assist students in making responsible choices that enable them to fulfill their needs in a realistic, appropriate fashion while not depriving others of the ability to fulfill their needs. Teachers try to help students accept responsibility for themselves by pointing out inconsistencies between their values and behaviors.

Reality therapy would appear to be an appropriate strategy with behaviorally disordered students to improve their social problem-solving skills in a variety of situations. Platt and Spivak (1972) and Shure and Spivak (1972) found that providing students with a set of task-oriented questions which point out how the consequences of their behavior are often incongruent with their desired outcome generally facilitates the occurrence of problem-solving behavior. For example, a teacher might be talking to a student who wants to drop out of school. The student may be talking about how bad school is which might draw the teacher into an argument in defense of school. However, using reality therapy techniques, the teacher might respond with a question such as, "Let me ask you something; if you don't go back to school; what will you do?" The student might respond that he or she will simply get a job. The teacher's response might be, "What sort of a job do you plan to get? How much money do you need?" The teacher is continuously confronting the student with the reality of the situation without being drawn into a power struggle. This engages the student in a discussion about what he/she really wants right now. The student might respond that what he/she really wants is not to be in a math class rather than being out of school altogether. The teacher then structures a dialogue around how the student can get what he or she wants with a minimal of consequences. The reality of the situation is that the student is in school and must do assignments. If the student wishes to be done with math, what are the student's choices? The teacher leads the student down a decision tree by refocusing the student to reality at each step.

PSYCHODYNAMIC PRINCIPLES

Psychodynamic principles can be very useful in understanding aspects of behaviorally disordered students' behavior. Such knowledge as understanding the three ego states, psychosexual stages, and defense mechanisms might help teachers determine the most desirable intervention to employ with these students. For example, psychodynamic theory posits that everyone uses defense mechanisms. These are seen as normal ways of coping with everyday life situations. However, behaviorally disordered children often use these defenses in excess. Awareness of the existence of certain defenses might help a teacher better cope with a student's behavior. Projection and displacement, for example, are two defense mechanisms that might alter the source of danger. In both, the student's affect and inappropriate behavior are exhibited, but attributed to someone or something else. Students might be projecting anger at a teacher when they are really angry at their parents. In displacement, if students are angry at their parents, they might exhibit the anger at an inanimate object such as throwing a chair or kicking the walls. Through responsive-listening the teacher might be able to ascertain what the underlying problem might be. Although the inappropriate behaviors still need to be consequated, the teacher might also help the students with strategies to appropriately deal with their parents. These mechanisms allow the student to ventilate his/her emotions without risking the loss of love and possible retaliation from the parents. This example demonstrates how, although behavioral interventions might be employed to decrease temper outbursts, it is necessary for the teacher and student to gain an understanding of the problem so that appropriate interventions might be employed. Perhaps the teacher would therefore want to arrange a meeting with the parents and student to discuss the conflict and how it effects the student's behavior in school, or refer the family to the school psychologist or counselor.

All too often, teachers and clinicians fail to examine possible underlying factors contributing to misbehavior. It appears likely that various interventions which are designed to be sensitive and responsive to underlying factors can increase the likelihood of obtaining maintenance and generalization because more of the determinants of the behavior are being addressed. For example, Shamsie (1981) found that adolescents who engage in antisocial behaviors often do not fit the criteria of the persistent and repetitive patterns of a conduct disorder. This group includes adolescents who exhibit anxiety and depression and for whom the antisocial acts are cries for help or acts of desperation. These adolescents are disturbed and only become disturbing to draw attention to their problems. Although the behaviors exhibited by both types of adolescents are often topographically similar, different factors often motivate the expression of these behaviors. Therefore, applying interventions without first carefully examining these factors might lead to the failure to address potentially serious emotional disturbances which may only become more severe if unattended.

SUMMARY

The purpose of this paper was to provide theoretical background including the efficacy of counseling strategies and methods in which they can be implemented to improve the interpersonal skills of behaviorally disordered adolescents. Although teachers usually do not engage in individual or group counseling, many counseling strategies can help teachers increase their awareness and understanding of these processes. This in turn may improve the effectiveness of many social skills training programs by improving the communication and relationship between students and teachers.

The Client-centered approach was discussed as a way to facilitate communication between teachers and students through the use of reflective-listening. This technique allows the teacher to create an atmosphere for encouraging students to disclose their feelings and behavior in situations encountered in school. Gestalt strategies were presented as a way to help students gain awareness of their feelings and behaviors. Awareness of body language in relationship to a student's verbal language was stressed. Major techniques included dialogue games, acting-out roles, and repeating and exaggerating verbal and nonverbal behaviors. Application of these techniques might be incorporated into various activities and groups facilitated by the teacher. Games such as charades, sculpturing, and plays all serve as a basis to implement Gestalt techniques.

Various cognitive-behavioral strategies were presented which Meichenbaum (1975) noted usually follow rational-emotive therapy. Reality therapy is another cognitive-behavioral approach which might be helpful in increasing students' social problem-solving skills. Rational-emotive therapy appears especially appropriate in the classroom setting because it involves instruction and homework. Instruction involves bringing students' behaviors to their attention and teaching them more appropriate, rational thinking. Teachers assign behavioral homework that will involve the students in activities that will act as a "counter-propagandist" force against faulty thinking and inappropriate behavior. Reality therapy uses a teaching strategy which directly emphasizes the students' choices. Teachers explore students' current behavioral choices and the consequences of what alternative choices might be. Students are taught to explore responsible choices for fulfilling their needs in a realistic fashion while not depriving others of the ability to fulfill their needs.

Acquiring some knowledge of psychodynamic principles is also important for teachers. This might help teachers determine some sources and rationale for certain behaviors occurring in various contexts. By exploring various determinants of students' behavior, appropriate interventions can be implemented which address these factors.

The principles, concepts, and techniques presented in this paper come from a variety of theoretical viewpoints, and therefore, the overall approach can be considered multi-modal. This approach requires some knowledge, flexibility, and versatility on the part of the teacher. A teacher who uses a multi-modal approach must strive to be consistent and comprehensive in integrating different strategies in order to meet the treatment needs and individual characteristics of behaviorally disordered adolescents. If teachers are to provide effective services for their students, they must be able to respond to the variety of needs these students present. Adherence to a single theoretical view often meets the teacher's needs more than the students' needs.

CONCLUSION

A need exists for more information on generalization of treatment gains when behaviorally disordered students acquire social skills (Van Hasselt, Hersen, Whitehill, & Bellack, 1979). The interpersonal skill deficits and maladaptive behaviors associated with behaviorally disordered adolescents represent an area that educators have attempted to remediate through either affective education or social skills training programs (Brown & McKinnon, 1983). Wood (1982) stated that these two areas are, in reality, very similar. Affective strategies, however, stress the identification and direct expression of feelings and interpersonal relationship building skills; while social skills programs usually follow a "curriculum" where objectives are developed and experiences are planned to teach appropriate behaviors. Both of these approaches rely heavily on various counseling theories as their basis. For example, Confluent Education (Brown, Phillips, & Shapiro, 1976) is an affective program which is designed to increase both students' and teachers' awareness of their feelings during various classroom situations while also teaching the student to develop a better knowledge of the relationship between their emotional responses and cognition. A number of Client-centered and Gestalt techniques form the basis of this program. Similarly, the Think Aloud curriculum uses cognitive-behavioral techniques found in Rational-emotive and Reality therapy.

Teacher awareness and knowledge of counseling strategies and the ability to implement them provides a means to address a wide variety of maladaptive behaviors exhibited by behaviorally disordered adolescents. It might also increase teachers' abilities to effectively implement existing social skills training programs. Clearly, more research is needed in this area. For example, Anderson (1981) emphasized that such little research has been conducted on the effects of teachers using counseling skills in the classroom that the few results to date are not conclusive. However, a first step is to interest teachers in learning counseling strategies. This would in turn provide a basis for collecting data to help resolve the question of efficacy and generalization of using counseling startegies to improve behaviorally disordered adolescents' social skills.

There has been a recognized need for generalizaton and transfer of affective learning in the classroom (Stokes & Baer, 1977; Walker, 1979). However, some generalization of social skills with adolescents has occurred using cognitive-behavioral counseling strategies which emphasize remediating individuals' affective and cognitive processes as well as their behavior (e.g., Block, 1978; Chandler, 1973; Klein, Alexander, & Parsons, 1977; Sarason & Ganzer, 1973). Some studies have addressed generalizaton of students' acquired social skills in the classroom using such cognitive-behavioral strategies as role playing (Lebsock & Salzberg, 1981), relaxation and biofeedback training (Walton, 1979), and assertiveness training (Carducci, 1980). These studies have begun to show evidence that generalization of social skills can occur with behaviorally disordered students in the school setting using counseling strategies that address both the affective and cognitive as well as the behavioral domains.

It is possible to effect changes in social behavior through the use of counseling strategies. This has already begun, in part, by using affective education and social skills training programs. There is a beginning recognition of the need to bring about effective programs in this area. Change will require greater teacher awareness and knowledge of counseling skills. One way to accomplish this is by providing teachers with information to practice counseling strategies. The development of counseling strategies is a gradual process which must be supported and implemented in day-to-day living situations. However, this appears to be a worthwhile endeavor as the research to date suggests that using counseling strategies holds promise for not only improving behaviorally disordered adolescents interpersonal relationships, but also encourages generalization of acquired social skills to other settings.

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Materials Selection and Adaptation: Strategies for Combating Curriculum Casualties Among the Behaviorally Disordered

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According to federal definition, a characteristic essential to classification as behaviorally disordered is "an inability to learn which cannot be explained by intellectual, sensory, or health factors" (*Federal Register*, 1977). In a survey of state definitions, White, Beattie, and Rose (1984) reported that 95% of states responding have incorporated a learning problems component into the definition of children with behavioral disorders. This figure represents a substantial increase from the 55% found in an earlier review (Epstein, Cullinan, & Sabatino, 1977). Accumulated evidence clearly supports the fact that the majority of disturbed children are academically retarded (Kauffman, 1981; Morse, Cutler, & Fink, 1964; Rubin & Balow, 1971). Yet within the field of behavioral disorders, a disproportionate amount of attention is sometimes given to reducing behavior excesses or deficits with less emphasis on building academic skills (Edwards, 1980; Murphy & Ross, 1983).

A burgeoning literature on children's behavioral disorders belies the fact that information on curriculum materials and instructional practices related to this population is limited. There appears to be some validity to the argument that a dichotomy exists between teacher preparation for the learning disabled and the behaviorally disordered: namely, that for teachers of the learning disabled the focus is on academics and for the teachers of the behaviorally disordered the emphasis is on classroom management. A survey of 19 recent textbooks (published from 1977 to 1984) pertaining to children with behavioral disorders revealed that 97.9% of the content focuses on managing behavior problems. By comparison, only 2.1% is devoted to methods and materials for academic instruction (150 of 7,000 pages). One reasonable explanation is that the authors presume that practitioners obtain knowledge of curriculum and instruction from other learning experiences. Still, assuming the figures are representative, they tend to support the contention that there exists a disproportionate emphasis in teacher training on management over instruction for children with behavioral disorders. The outcome of such predominance in preservice education is that classroom personnel may possess an incomplete technology for dealing with behaviorally disordered children and youth. That is, practitioners are more likely to have acquired *process* skills (i.e., behavior management) than *tool*

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skills (i.e., materials selection, evaluation, and adaptation).

The importance of using strategies for coping with children's behavior problems — ranging from withdrawal to aggression — is self-evident. However, research and clincial experience support the proposition that bringing behavior problems under control does not necessarily produce academic gains (Polsgrove & Nelson, 1982). In contrast, studies have shown that increasing academic success can function to decrease problem behaviors (Edwards, 1980). Kauffman's (1981) contention that academic failure is likely to precipitate renewed frustration and perpetuate a cycle of learning and adjustment difficulties warrants consideration by teacher educators.

In that students spend 75 to 99% of their instructional time interacting with materials (Wilson, 1983), knowledge and wise usage of materials is a critical attribute for teachers of the behaviorally disordered. Competence with instructional materials is critical from the standpoint that (a) most academic learning in special settings will involve instructional materials, and (b) success in the mainstream environments will require behaviorally disordered students to properly interact with and learn from curricular materials.

Gable, Hendrickson, and Young (1983) found that 79% of the time teachers of the behaviorally disordered rely on commercially-produced materials for carrying out instruction. Unfortunately, it has been established that less than 1% of these materials have been field-tested and validated as effective with exceptional children (Stowitschek, Gable, & Hendrickson, 1980). In addition, fewer than 5% of teacher training programs offer coursework in materials adaptation. Given that teachers depend heavily on commercial materials and that few published materials are tested with special populations, the dearth of materials developed specifically for behaviorally disordered students is not surprising. Unfortunately, guidelines upon which to base evaluation and selection of instructional materials per se (Swanson & Reinert, 1984) are scant. As a result, practitioners usually are forced to rely upon available materials (D'Alonzo, 1983; Stephens, 1977) and apply them in whatever manner they see fit. Given this scenario, the explanation for why many behaviorally disordered students become "curriculum casualties" (H. A. Tennebaum, personal communication, August 1984) becomes apparent.

In this article a Materials Assessment/Review Model is presented as part of a four-step process that practitioners may follow to enhance the effectiveness of curriculum materials usage with behaviorally disordered students. The model presented is appropriate for ameliorating academic learning difficulties encountered by teachers in special education and mainstream settings. Focus is on the link between the process and tools of instruction. Implicit is the fact that wise materials usage is complementary to the majority of strategies used for managing children's behavior.

Table 1 presents the Materials Assessment/Review Model for facilitating integration of the process and tools of instructing behaviorally disordered students. As can be seen, curriculum (materials) and instruction (teaching techniques) continually interact and affect each other. This is true whether special educators plan the interaction or ignore its existence. Next, preview of the model shows that both curriculum and instruction are part of and integrally tied to the recurrent cycle of curriculum placement, instruction using materials, and initial measurement and progress monitoring related to skills and knowledge in the material. Specific aspects of placement, curriculum, instruction,

TABLE 1

The Material Assessment/Review Model

Student Placement (Initial Assessment)	**Curriculum**	**Instruction**	**Measurement (Progress Monitoring)**
Test: Probes/Tests for placing the student	Content tied to behavioral objectives	Prompts, models	Direct observation data
		Reinforcement	Continuous or frequent measures
Teach: Prerequisites are listed by unit; Objectives are listed by unit	Sequenced: simple to complex; easy to more difficult	Self-correcting corrective feedback	Test: Acquisition, proficiency building, maintenance, and generalization
	Redundancies: provision for repeated practice and varied practice	Practice: spaced, distributed, massed	Teach: Acquisition, proficiency building, maintenance, and generalization
	Acquisition--format and content	Teaching arrangement: specific varied	
	Proficiency building--format and content		
	Maintenance--format and content		
	Generalization Training--format and content		

and measurement are presented in columns below each of these four components. Elements of each component should be considered in making decisions about materials and are discussed in Step 3 (Materials Assessment) of the four-step procedure for implementing wise materials usage.

THE FOUR-STEP SEQUENCE TO EFFECTIVE MATERIALS USAGE

The four-step sequence for improving materials usage in classrooms for the behaviorally disordered is presented below. The steps include a materials inventory, budgetary considerations, the Materials Assessment/Reivew Model, and guidlelines for materials adaptation.

Step 1: A Materials Inventory

In order to ascertain general or specific curricular material needs, it is recommended that practitioners first determine exactly what materials--traditional and nontraditional--are available. Even the most spartan of classrooms is likely to yield more material than would be predicted. The main purpose of an initial (and ongoing) inventory is to provide a basis for making purchase and/or adaptation decisions. A materials inventory yields a clear indication of available materials, uncovers little used or forgotten materials, determines the quality and usability of existing materials, and provides a list that can be revised and updated as new materials are acquired.

A materials inventory may range from simple to relatively complex. An inventory may consist of straightforward listing of materials or a list organized according to (a) name and publisher, (b) skills addressed, (c) location in the classroom, (d) type(s) of teaching arrangements for which the material is best suited, (e) format for presenting the material, (f) input and output modalities of the materials, and (g) teacher rating of the usefulness of the material. Generally, an adequate materials inventory can be accomplished in a day (e.g., a teacher inservice session). Assistance of a parent volunteer may be particularly useful in conducting an inventory. Upon completion, the materials inventory will pay immeasurable dividends in future time savings related to retrieval and selection of instructional materials (Stowitschek et al., 1980).

After the materials inventory has been conducted, it is necessary to ascertain which skills students need to learn. Once teachers know their material resources and instructional objectives (skills to be taught), the next task is to obtain, inventory, and organize old and new materials. Usually, needed materials can be acquired by (a) relying on teacher-made materials, (b) borrowing materials through personal (e.g., an LD colleague) or system resources (e.g., lending libraries), and/or (c) purchasing the materials.

Step 2: Budgetary Considerations

The commercial marketplace is flooded with attractive, seemingly appealing materials from which to choose. However, caution must be exercised; while many materials look promising, their ultimate educational effectiveness may be limited. With that caveat in mind, teachers of the behaviorally disordered must select the type of instructional materials they need. Bliel (1975) placed materials into four categories: instructional or core materials, drill and practice materials, test (assessment) materials, and free-time activities materials. Stowitschek et al. (1980) have proposed that of these four types of materials, generally it is wisest not to spend money for diagnostic tests, drill and practice, and free-time materials. Criterion-referenced tests, drill, and free-time materials are the least expensive and simplest items to construct. Ideally, well-sequenced, validated core curricula that will guide instruction should be the priority. Although few validated curriculums are commercially available (D'Alonzo, 1983), an attempt should be made to identify materials with content and scope to meet instructional needs.

Another factor that influences purchasing decisions is whether the budget is an initial (start-up) or continuation budget. For example, in establishing a new classroom funds should be expended on core curricular items. Once core materials are acquired, more latitude in selecting supplemental materials to reinforce, maintain, and promote generalization is possible. As a rule, it is recommended that teachers spend 75 to 80% of available funds to establish or expand core materials and the other 20 to 25% for supplemental materials (Stowitschek et al., 1980). Obtaining materials that (a) contain redundancies (i.e., content previously mastered so that 50-75% of daily instruction is aimed at building retention), (b) maintain high learner success rates, and (c) serve as a measure of the durability of prior learning is advocated (Paine, Radicchi, Rosellini, Deutchman, & Darch, 1983).

A variety of alternatives are available for supplementing instructional materials. Among potentially successful options are the following: (a) Collaborate in purchasing core materials with colleagues in the building (or possibly school system); (b) purchase materials well in advance of anticipated need; (c) collaborate with colleagues in the construction and use of materials; (d) seek prototype and sample copies from publishing companies; (e) obtain materials from companies on a "tryout basis"; (f) use libraries for obtaining materials and/or equipment for use on a short-term basis; and (g) keep long-range goals in mind when constructing or purchasing materials. Any material that is 80% reusable is worthy of initial consideration from a cost-effectiveness standpoint. Finally, it is advisable to estimate the worth of a material by subjectively calculating an "efficiency quotient" by assessing the relative expense according to anticipated short- and long-range instructional outcomes (Wiederholt & McNutt, 1977).

Step 3: Material Assessment/Review

Teaching materials — the so-called tools of the trade — must be adequate to the demands of teaching behaviorally disordered youngsters evidencing a wide range of learning deficits. Teachers must be prepared to (a) properly place students in a curricular material; (b) identify those instructional variables and tactics that will enhance learning rate, maintain student motivation, and lead to independent responding; and (c) monitor student performance (see Table 1). Elaborating on strategies advocated by Edwards (1980) and Stowitschek et al. (1980), the Material Assessment/Review Model reveals three fundamental questions regarding any material:

1. Does the material allow for precise placement of the student?
2. Is the instructional design of the material such that the process and content of instruction come together in a complementary fashion?
3. Are the materials and procedures necessary for progress monitoring provided?

The Material Assessment/Review Model may or may not be executed in writing. However, it is prudent to assess a material prior to purchase and classroom application. Through previewing it is possible to make cost-effective decisions; later, through ongoing assessment it is possible to maximize a material's instructional value (Gable & Hendrickson, 1979).

Student placement. For correct curricular placement, instructional materials that provide for criterion-referenced assessment are most desirable. Criterion-referenced tools (probes) should be likened to behaviorally-stated objectives, which in turn are part of a well-organized sequence of objectives (see Table 1). Without fixed and quantifiable objectives it is difficult to determine the purpose of the material, much less where to begin instructing the student (Stowitschek et al., 1980).

If it is determined that procedures are lacking or inadequate, placement tests will need to be constructed before introducing the material. Depending on the length of a unit of instruction, the same assessment tool may be used to pretest, posttest, and to evaluate response maintenance (Gable, Hendrickson, & Lyons, in press). The instructional material itself should be designed to allow students to begin instruction at a variety of points (i.e., segments of the material should focus on specific subskills). Since classroom instruction is often adversely affected by response deficits of handicapped learners (Hallahan & Kauffman, 1978), prerequisite skills for each entry point should be stated in writing by the publisher.

The relationship of curriculum to instruction. Determining the interface of content and instructional method is a critical aspect of the material assessment/review. First, the curricular material must be designed so as to include (a) behavioral objectives, (b) content developed to directly meet those objectives, (c) content organized from simple-to-complex, (d) content organized from easy-to-difficult, (e) content with built-in redundancies, and (f) content that provides for skill acquisition, proficiency building, maintenance, and generalization. Principles of learning should be incorporated throughout the material and be obvious in the design and process of instruction. Factors related to the interface of content and teaching method are as follows:

1. Provision for practice of skills — spaced, distributed, or controlled practice;
2. Provision for clear, understandable instructions to the student;
3. Provision for appropriate learner responses;
4. Provision for sufficient prompts and models with appropriate fading thereof;
5. Provision for immediate reinforcement and corrective feedback to the student;
6. Provision for specific and/or varied teaching arrangements (e.g., tutorial, independent, controlled seatwork, teacher-led instruction); and
7. Provision for training for generalization and generalized responding.

Measurement. As shown in Table 1, the Material Assessment/Review Model, the dimension of measurement includes provision for direct measurement of skills to be taught. Establishment of an effective measurement system for instruction begins with initial assessment (Stowitschek et al., 1980). It follows that materials that do not allow for databased measurement must be supplemented accordingly. Ongoing (progress), mastery, maintenance, and generalization measures should also be incorporated into the material. Again, it will be the educator's responsibility to develop procedures for measuring these stages of learning, if the materials are not provided. Finally, although few materials contain measures of these features, durability and generalizability of skills taught to the behaviorally disordered represents the ultimate criterion of an instructional material's worth.

Step 4: Materials Adaptation

Often it is clear that modifications will have to be made prior to introducing students to an instructional material. Whether the material is modified in advance of or subsequent to student tryout, certain guidelines are useful. Preliminary changes in a material should be considered in the following sequence: (a) change the content, and (b) change the measurement system. Clearly, if the content is not appropriately developed, the measurement system will need to be altered. Even if the content is acceptable, the measurement system will still need to be examined, and perhaps modified, prior to introducing the material. Once content and measurement are tied to the instructional objectives and procedures selected, instruction can begin, and a Student-Based Materials Evaluation initiated (Gable et al., in press).

A Student-Based Materials Evaluation (SBME) is a convenient process for determining the effectiveness of an instructional material. Although the SBME is discussed in detail in a following subsection, it is important to point out that the *final* step of an SBME consists of carrying out major changes in curriculum content and student responding. That is, if the teacher is comfortable in introducing a material, it is *not* recommended that curriculum content changes be made (the logic of which is presented in the section on SBME).

Curriculum content adaptations. Table 2 contains the Curriculum Content Adaptation Form which serves as a guide to modifying curriculum content. The Curriculum Content Adaptation Form contains three primary aspects of any material that may need adaptation: curriculum, instruction, and measurement. Subcomponents of each are listed on the left of the form. In examining a material, it is useful to record comments in the center of the form. To the right, there is a checklist of the most common types of modifications corresponding with each component of the curriculum. A checkmark indicates needed changes. For instance, do *objectives* need to be written or simply revised? Is the *content* adequate? Are new skills or steps needed or do existing skills/steps need revision or expansion? Similarly, the appropriateness of the teaching format, the primary medium of the material, and student response mode must be considered. Finally, the *sequence* of skills and steps must be judged either as adequate or in need of adaptation. Comparable decisions can be made for instruction and measurement (see Table 2). If various aspects of the curriculum appear deficient (i.e., evaluation yields numerous checkmarks), it may be wise to disregard the material as a viable teaching tool. Once all curriculum content modifications deemed essential for placing students are completed, the measurement system must be evaluated and adapted to suit the material (see Table 2).

If the exact adaptations needed are unclear, it is recommended that a SBME be conducted *prior* to attempting any adaptation of the material since adapting objectives, content, and/or sequence represents a major undertaking. Through actual student use and ongoing assessment, the strengths and weaknesses of the program will become obvious. A major advantage of the SBME is that only *one* aspect of an instructional program at a time is modified. Consequently, the impact of each modification on student performance can be observed directly, an approach which is preferable to adaptations based solely on unsupported opinion.

The Student-Based Materials Evaluation (SBME). Student-based material evaluations are important to teachers of the behaviorally disordered because few materials have been field-tested and validated with this population of students. To conduct a SBME one need only select a limited number of students — 2 to 3 — with whom to try out the materials. Usually, the teacher will want to test content that comes from the beginning, middle, and end sections of an extensive curriculum. While the time allotted for an SBME will vary, 1 to 3 weeks should suffice. The advantage of a Student-Based Material Evaluation is that students are simultaneously learning and providing input on the materials' effectiveness. Of course, no SBME should begin until an objective measurement system has been selected. Teachers may use a pretest-posttest measure, or daily observational measures of student performance. If the goal is simply to determine if the material works, a pretest-posttest measure is sufficient; if the goal is to determine exactly how and when learning (or erring) occurs, a continuous measurement system is advocated (Gable et al., in press).

Once baseline performance is established, a three-step adaptation procedure can be initiated. The adaptation procedure recommended is the Consequence-Stimulus-Response (CSR) Strategy reported by Henderson and Rovig (1977). CSR represents the order in which adaptations should be carried out; that is, first the consequence should be modified and assessed, second the stimulus materials, and finally the student response itself. The order of modifying material is a matter of efficacy; the simplest to modify and the component most likely to positively affect learning is the consequent event (Henderson & Rovig, 1977). Next, modifications of the stimulus itself are called for. These changes typically consist of modifications that alter the antecedents of performance through provision of additional cues, demonstrations, and models. Finally, the most difficult aspect of adaptation is addressed, modifying the student response. Modifying the student's response by introducing new responses or changing the response mode may require considerable adaptation of objectives, content, and/or sequence.

Step 1: The consequence. Changing the consequence means changing the reinforcement. This may be accomplished by providing a reinforcer where none was given, providing reinforcement more often, or changing the type and amount of reinforcement.

Step 2: The stimulus. If modifying the consequence of student responding does not lead to improved student performance, the stimulus material itself may need to be changed. Typical changes in stimulus material include adding directions, prompts, corrective feedback, visual displays and models, additional practice exercises, and providing for redirection.

Step 3: The response. Finally, if the stimulus modification(s) do not lead to desired behavior changes, the response itself may require modification. Most often this will require substantial effort on the part of the teacher as when, for instance, written responses need to be changed to oral responses. Obviously, someone or something (tape recorder) will be required to listen to the responding if a response is modified in this way. Also, by adding steps or skills to the sequence of instruction, new responses are often required of the learner. Corresponding to the adaptations shown in Table 2, these modifications are substantial in terms of time and effort and should be undertaken only after steps 1 and 2 have not proven to be effective.

TABLE 2

Curriculum Content Adaptation Form

Description of Material

Area	Specification of Problem	Checklist of Modification	
Curriculum		Write objectives	
Objectives		Revise objectives	
		Use available list of objectives	
Content			
Acquisition		Add new content steps	
Maintenance		Revise/expand content steps	
Generalization		New format	
		medium	
		response mode	
		Revise Format	
		medium	
		response mode	

Sequence

Critical elements ______________________________ Develop alternative sequence(s) ____

____

______________________________ Develop steps/content ____

Redundancies ______________________________ Drop steps ____

____

______________________________ Add substeps--repace ____

Measurement

Initial Assessment ______________________________ Revise this test(s) ____

- Pre-posttest ______________________________ Adapt another test ____
- Placement ______________________________ Devise new test ____

____

Progress Monitoring ______________________________ Revise probes ____

TABLE 2

Curriculum Content Adaptation Form

Description of Material ______________________________

Area	**Specification of Problem**	**Checklist of Modification**	
• Daily/Weekly		Prepare new probes	
• Self-counts			
Performance Criteria		Specify accuracy	
		Specify speed/rate	
		Specify aim date	
		Specify trials	
		Specify criteria for	
		• Acquisition	
		• Maintenance	
		• Generalization	

Maintenance and Generalization	____	Specify aim dates	____
	____	Specify probe dates	____
	____	Specify new factors, e.g., settings, people, materials	____
Visual Display	____	Revise Charts/graphs	____
		Add charts/graphs	____
	____	Group display	____
Instruction		Individual display	____
Practice	____		
• Massed	____	Slice/segment activities	____
• Distributed	____	Add distributed practice	____
• Controlled	____	Expand practice activity	____
Instructions/Directions	____	Write/simplify directions	____
	____	Vary directions	____
	____	Add directions in other modalities	____

TABLE 2

Curriculum Content Adaptation Form

Description of Material ________________________________

Area	Specification of Problem	Checklist of Modification	
Learner Response	________________	Adapt response mode	____
	________________	Remediate response mode	____
	________________	Teach prerequisites	____
Prompts and Models	________________	Revise/add prompt(s)	____
	________________	Revise/add demonstrations and (permanent models)	____
	________________	Add physical guidance	____
	________________	Other modality input	____
Reinforcement	________________	Add external reinforcement systems, e.g., points, edibles, contracts, tokens	____

Correction or Redirection		Add self-correction materials	
		Add self-monitoring materials	
		Provide alternate track, e.g., additional practice material, teacher-directed activity, slower paced material	
Teaching Arrangements		Revised teaching acts	
		add 1:1 tutorial group-individuivualized or sinced group format omit a format	
Generalization Training		Revise Program	
		Add program	

Additional comments:

Adapted from Stowitschek, Gable, & Hendrickson (1980)

CONCLUSION

For the behaviorally disordered student, simply managing disruptive/inappropriate behavior is insufficient for carrying out a program that leads to increased academic learning (e.g., Murphy & Ross, 1983). This insufficiency appears to be linked to an inefficient use of the existing technology for teaching. Given that a technology is a *process* (teaching strategies) whereby *tools* (teaching materials) are employed to produce academic gains, it appears that often the focus is on process over tools for serving the behaviorally disordered. We have argued, therefore, that an efficiently operating classroom must provide for full integration of strategies *and* materials.

It has been suggested that teachers of the behaviorally disordered have not always been adequately prepared to meet the challenge of providing sound academic instruction. Yet the ultimate success in teaching behaviorally disordered students is judged according to their academic competence and ability to perform successfully in various settings. Achieving academic competence is hindered by a lack of instructional materials designed to meet their special needs (e.g., D'Alonzo, 1983). Consequently, practitioners must be skilled in the selection and adaptation of materials for this population. Together, the Curriculum Assessment/Review Model, the CSR Strategy, and adaptation procedures seem well-suited for use by teachers of the behaviorally disordered as they apply the *tools* of instruction.

Presently, nearly 50% of behaviorally disordered students are receiving instruction in regular classrooms (Ysseldyke & Algozzine, 1984). To a large extent these students will be expected to use standard curriculum materials. By selecting and modifying materials in ways suggested, special educators set the stage for improved academic learning and for progression from adapted to conventional materials. Today, use of strategies for shifting from adult-mediated to child-mediated classroom control is a basic goal with behaviorally disordered students (e.g., Reitz, Gable, & Trout, 1984). Through appropriate use of instructional materials — in group, tutorial, or group-individualized teaching/learning formats — behaviorally disordered students may move one step closer to managing their own learning and to succeeding in least restrictive environments.

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Academic and Intellectual Characteristics of Behaviorally Disordered Children and Youth

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ABSTRACT

Research describing academic and intellectual characteristics of behaviorally disordered students is reviewed. Investigations reviewed in this paper have focused on areas of intellectual, academic, and psychosocial functioning as they pertain to school achievement. In general, it has been found that behaviorally disordered students exhibit academic deficiencies greater than those exhibited on tests of intellectual functioning and perform below average in all content areas, with particular discrepancies noted in math functioning. In addition, variables such as locus of control, responses to the test-taking situation, and attitudes toward academic tasks, may covary with academic performance.

All students classified as behaviorally disordered by definition are in need of programing designed to improve social or emotional functioning. Since most of this programing occurs in academic environments, however, it is important to know whether students so classified also exhibit deficiencies with respect to intellectual or academic functioning. If behaviorally disordered students are generally found to be deficient in academic functioning, it may be necessary to incorporate remedial instruction as a major component of the educational environment. This review is intended to synthesize academic and intellectual characteristics of behaviorally disordered children and youth in order to provide a basis for future research and practice.

Two databases *(Psychological Abstracts, ERIC)* were examined for data-based articles pertaining to academic and intellectual characteristics of behaviorally disordered students. In addition, recent books on behavioral disorders (e.g., Kauffman, 1985) were reviewed for sources. Finally, past issues of the journal, *Behavioral Disorders,* and the monograph series, *Severe Behavior Disorders of Children and Youth,* were examined for relevant articles. Articles were included which selected a population on the basis of disturbances in social or emotional functioning, exclusive of psychotic or autistic samples. By these means, 25 articles reporting data were located and are given in Table 1.

The investigations reviewed here represent a wide range of samples of children and youths referred to as *behaviorally disordered.* To this extent, any general agreement between investigations suggests broad generalizability. When research reports disagree, however, interpretations are more difficult. In general, descriptions of academic and intellectual characteristics can be divided into three main areas: (a) intelligence, (b) achievement, and (c) psycho-

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social functioning and academic performance.

INTELLIGENCE

Studies of intellectual functioning are of relevance to the study of academic characteristics for two reasons: (a) IQ consistently has been a strong predictor of academic achievement (Kauffman, 1985); and (b) IQ scores can provide information concerning ability/achievement discrepancies. The following section describes the results of several investigations of intellectual performance.

In 1964 Stone and Rowley reported a mean IQ of 96.5 (ranging from 62 to 135) for 116 children referred for psychiatric services. Graubard (1964) found 21 delinquent or neglected boys in psychiatric residential treatment for 2 to 8 years to have a mean IQ of 92.3 (range 71 to 108). Schroeder (1965) reported that for 106 students classified as psychosomatic, aggressive, exhibiting school difficulties, school phobic, or neurotic, the average IQ was 95.95. Motto and Lathan (1966) studied 47 schoolage children in a state hospital and reported that, as a group, they were in the dull normal range of general intelligence. Galvin, Quay, and Werry (1971) reported IQ ranges of 89 to 112 for 11 conduct problem children placed in special classrooms. Fuller and Goh (1981) examined 38 learning disabled and 42 emotionally disturbed public school children and reported lower average IQ scores for the learning disabled than for the emotionally disturbed students (86.13 and 89.50, respectively). As recently as 1983 Forness, Bennett, and Tose reported that 92 subjects (23 girls and 69 boys) who had been inpatients at a neuropsychiatric institute had, on the average, IQ scores in the low 90s.

Reilly, Ross, and Bullock (1980) examined the intellectual performance of 177 adjudicated adolescents and reported a mean IQ score of 90.26, a figure consistent with that of a previous investigation (Bullock & Reilly, 1979). In addition, these researchers reported that subjects scored near average on the Picture Arrangement subtest of the Wechsler Intelligence Scale for Children - Revised (WISC-R) which requires visual sequencing of simple stories, but lowest on those verbal subtests which require knowledge of the "outside world": Information, Similarities, Vocabulary. Finally, a relation between IQ performance and violent behavior was not found in this investigation.

Research on intellectual performance of disturbed children reveals that the majority of mildly and moderately disturbed children fall only slightly below average in IQ. These investigations taken together appear to suggest that mild academic deficiencies could be predicted on the basis of observed intellectual functioning. Scruggs and Mastropieri (1984) pointed out that IQ scores in combination with achievement test scores can provide information regarding relative discrepancies between ability and academic performance of the behaviorally disordered population. What IQ scores cannot do is describe behaviorally disordered students' actual levels of academic performance. Kauffman (1985), however, does maintain that IQs of disturbed children are the best predictors of future educational achievement. The following section describes investigations of academic functioning.

ACHIEVEMENT

Reading and Arithmetic

Silberberg and Silberberg (1971) reviewed research on school achievement

TABLE 1

Academic Characteristics Studies of the Behaviorally Disordered

Authors	Subjects	Task	Results
Bullock & Reilly (1979)	188 adolescents adjudicated for behavioral offenses	Wechsler Intelligence Scale, Wide Range Achievement Test (WRAT)	1. Average IQ of 90 2. Average achievement deficit in all areas 3. Discrepancies were greatest for males, minorities, older students
Epstein & Cullinan (1983)	16 matched pairs (IQ, sex, CA, ethnicity); LD & BD; public school students	Peabody Individual Achievement Test (PIAT) and Wide Range Achievement Test (WRAT) were administered to both groups	1. BD students scored significantly higher than LD students on all subjects except general information subtest of PIAT and math subtest of WRAT
Forness, Bennett, & Tose (1983)	23 girls, and 69 boys who had been patients at a neuropsychiatric institute; mean age 10.1 years	Peabody Individual Achievement Test (PIAT) and Wechsler Intelligence Scale for Children-Revised (WISC-R) were administered to all students	1. Both girls and boys scored below expected levels on PIAT (moderately) 2. Both girls and boys IQ in low 90s 3. 12 yr old boys worse in reading recognition and reading comprehension 4. 10 yr old girls 2.1 yrs below grade level 5. 12 yr old girls 1.7 yrs below grade level
Forness & Dvorak (1982)	40 BD adolescents (15 males, 25 females) who had been inpatients at a neuropsychiatric institute; mean age 15.7 years	Comprehensive Test of Basic Skills (CTBS) was administered and scored under timed and untimed testing conditions	1. No significant test score differences except on the reading comprehension subtest
Forness, Frankel, Caldron & Carter (1979)	34 children (CA 7.0 to 12.9) hospitalized for severe behavior disorders	Peabody Individual Achievement Test (PIAT)	1. Students were deficient in all academic areas particularly math and spelling 2. Longer hospitalization periods were associated with greater academic gains

Fuller & Goh (1981)	38 LD and 42 ED children; public school setting; mean age 10 years	Wechsler Intelligence Scale for Children-Revised (WISC-R), Wide Range Achievement Test (WRAT), and Minnesota Percepto-Diagnostic Test (MPD) were administered to all students	1. Discriminant analysis procedures indicated that LD students and ED students could be accurately placed 2. LDs lower than EDs on IQ, reading, spelling, and math but not on MPD (however, no statistical tests computed on results)
Glavin & Annesley (1966)	130 BD boys and 90 normal boys in public school settings. (BD further divided into conduct problem, withdrawn, and inadequacy-immaturity groups)	California Achievement Test (CAT) and Behavioral Scales (Quay & Peterson 67)	1. 81.5% of the BD group were underachieving in reading 2. 72.3% of the BD group were underachieving in arithmetic 3. No significant differences in performance were found between the conduct disordered group and the withdrawn group
Glavin & DeGirolamo (1966)	1. 9 ED and 9 regular education students; public school setting 2. 15 ED students classified as either conduct disordered or withdrawn, and regular ED students	Spelling words from GATE's *A List of Spelling Difficulties in 3876 words* (1937) were administered to both groups	1. ED students made more "internal" errors and fewer "external" errors than regular students 2. Withdrawn students wrote significantly more unrecognizable words 3. Conduct disordered students made significantly more "refusal" errors

TABLE 1

Academic Characteristics Studies of the Behaviorally Disordered

Authors	Subjects	Task	Results
Glavin, Quay, & Werry (1971)	Conduct problem children placed in experimental special classrooms; 50% Afro-American; IQs 89-112; 1967, *N*=11, mean age 108 months (age range 92-132); 1968, *N*=12, mean age 112 months (age range 89-131); both years, *N*=8	1967, Wide Range Achievement Test (WRAT); 1968, California Achievement Test (CAT) pre- and post	1. 1968 arithmetic gain 1.7 years 2. 1967 arithmetic gain .1 years 3. 1968 reading gain 1.2 years 4. 1967 reading gain .5 years 5. 1968 greater emphasis on academic achievement 6. Gain indicates program brings changes in specific learning-related behavior and obtains concomitant gains in academic achievement
Graubard (1971)	108 disturbed students in special schools	Reading Achievement, Behavior Problem Checklist	1. No overall reading deficiency 2. Observed deficiencies associated with severity of conduct disorder
Graubard (1965)	35 disturbed delinquents incarcerated at residential treatment center; age range 8 years 6 months to 10 years 11 months	Wechsler Intelligence Scale for Children (WISC), Metropolitan Achievement Test (MAT), Illinois Test of Psycholinquistic Abilities (ITPA), Monroe Test of Auditory Blending (MTAB), and Harris Test of Lateral Dominance (HTLD)	1. BD students did not differ from normals in communication pattern 2. BD students have deficits in the visual-motor channel (the integration level) 3. BD students have deficits in the Auditory Vocal Automatic modality and in directionality

Graubard (1964)	21 children in psychiatric residential treatment from 2-8 years (delinquent or neglected); mean age 13 years 10 months (range 10-16); mean grade 7.9 (range 5-11; mean IQ 92.3 (range 71-108); all boys	Wechsler Intelligence Scale for Children (WISC), Metropolitan Achievement Test, Stanford Achievement Test	1. Difference between reading and math not significant; mean grade rating both tests 4.75; mean grade reading comprehension 4.87; mean grade arithmetic computation 4.62. 2. Educational disability measured by comparing mental age to reading and arithmetic ages. Severe reading and arithmetic disablility found 3. Not achieving commensurate with mental ages and disabled in academic achievement 4. No evidence supporting significant difference between reading and arithmetic achievement in population with severe emotional problems over time
Harris & King (1982)	242 children in grades 4 and 5 in public school settings; students were classified as LP (learning problem *N*=33), BP (behavior problem *N*=17), LBP (learning & behavior problem *N*=19) or NP (no problem *N*=173)	Science Research Associates Achievement Tests (SRA), Children's Personality Questionnaire (CPQ), L-J Sociometric Test (L-JST)	1. LP students achieved lower scores on SRA, were less preferred by peers, were less intelligent than NP and less assertive than BP and LBP groups 2. BP did not differ from NP or SRA subtests: Reading, Math, Science, Use of Sources, but did differ from all groups on Language Arts and Social Studies 3. BP did not differ from any group sociometrically 4. LBP did perform lower than all groups on SRA, were preferred less by all groups

TABLE 1

Academic Characteristics Studies of the Behaviorally Disordered

Authors	Subjects	Task	Results
Hisama (1976)	48 special ed children with learning and behavior problems; mean CA 108 months (ranges 96-132); public schools; 3rd or 4th graders. 48 normal 3rd or 4th graders; free from learning and behavior problems randomly selected; mean CA 106 months (ranges 90-136)	Children's Locus of Control Scale (CLCS), Coding Test and Digit Symbol Test from WISC, Wechsler Adult Intelligence Scale (WAIS), NIM game (match game)	1. No significant difference in CLCS scores between normals and LD and BD. BD not externally oriented 2. Coding Test showed children with internality performed better than those with externality 3. Within experimental group, externally-oriented child responded to success experience positively and performance depressed under failure condition
Letteri (1979)	200 subjects (some BD some not)	Cognitive Profile	1. Cognitive profile associated with low academic achievement and severe behavior problems is: simple, leveler, intolerant for ambiguous information, global, broad, non-focuser, and impulsive
Motto & Lathan (1966)	School-age population of state hospital; 34 boys, mean age 13 years 1 mo (range 10-2 to 16-9); 13 girls, mean age 11 years 2 mo (range 9-3 to 15-1); as group, in dull normal of general intelligence	Wechsler Intelligence Scale for Children (WISC); Wechsler Adult Intelligence Scale (WAIS), Stanford-Binet, Form L; California Achievement Test (CAT), reading and arithmetic	1. Uniformity of achievement in reading and arithmetic - not significantly different 2. Females, CA 1.4 below expectations in reading; CA 1.6 below expectations in arithmetic; MA .7 below expectancy in reading, and .9 below in arithmetic 3. Males, CA 2.6 below reading expectancy; CA 3.7 below expectancy in arithmetic; MA 1.8 below reading, and 1.9 below arithmetic

			4. More pronounced retardation in males 5. Children in hospital school in excess of 10 months gained in reading and arithmetic achievement to extent expected for their mental ages
Perna, Dunlap, & Dillard (1984)	63 males classified as mildly to moderately ED in public schools; age range 10-15 years (mean age 12.9 years)	Intellectual Achievement Responsibility (IAR), Chronological age, Stanford-Binet IQ (S-BIQ) or WISC-R, California Achievement Test (CAT)	1. ED students who felt a high degree of self-responsibility for their successes and failures showed greater academic gains
Reilly, Ross, & Bullock (1980)	177 adolescents adjudicated for specific behavioral offenses	Wechsler Intelligence Scale for children (WISC-R) Wide Range Achievement Test (WRAT)	1. Average WISC-R IQ of 90.26. Near average scores on Picture Arrangement; lowest scores on Information, Comprehension, Vocabulary 2. Average achievement was deficient in all areas. Arithmetic scores were consistently lower than reading; violent offenders had the lowest reading scores 3. A relation between IQ and violent behavior was not found

TABLE 1

Academic Characteristics Studies of the Behaviorally Disordered

Authors	Subjects	Task	Results
Schroeder (1965)	106 students classified in one of five categories (psychosomatic, aggressive, school difficulties, school phobia, neurotic-psychotic personalities); mean age 147.06 months	Wechsler Intelligence Scale for Children (WISC), Jastak Wide Range Achievement Arithmetic, Jastak Wide Range Achievement Reading (WRAT)	1. Mean scores consistently lower in arithmetic than reading in all five categories 2. School difficulties category lowest mean achievement level in arithmetic and reading 3. Highest grade equivalent composite mean in neurotic-psychotic category 4. Emotionally disturbed children were retarded from age level in school achievement 5. Educational disabilities concomitant with emotional disturbance and vice versa
Scruggs & Mastropieri (in press)	50 BD and 28 LD Students in grades 3-4	Training test-taking skills relevant to the Stanford Achievement Test (SAT), reading subtests	1. BD and LD students exhibited deficiencies on the SAT reading subtests. Test scores improved significantly with training
Scruggs & Mastropieri (1984)	1480 LD and BD students in grades 1-3	Stanford Achievement Test, all subtests	1. Only slight differences between LD and BD groups, with LD students consistently higher in achievement 2. Factor score patterns of LD and BD students were equivalent
Scruggs, Mastropieri, & Tolfa (1985)	41 LD and 44 BD students in grades 4-6	Training test-taking skills relevant to the SAT, reading, and math subtests	1. Trained LD and BD students gained on the reading decoding subtest relative to controls

			2. Differential gain on the part of trained BD students over trained LD students on "math concepts" subtest
Scruggs, Mastropieri, Tolfa, & Jenkins (1985)	37 BD students and 50 nonhandicapped students, grades 5-6	Test Attitude Scale (TAS)	1. BD and nonhandicapped students did not differ at the beginning of the school year 2. After three days of testing, BD students reported lower attitudes in personal feelings and personal importance of tests, but did not differ with respect to attitudes concerning fairness of tests
Stone & Rowley (1964)	82 boys and 34 girls; mean age 12 years; mean IQ 96.52 (range 62-135)	Wide Range Achievement Test (WRAT), arithmetic and reading parts; Wechsler Intelligence Scale for Children (WISC)	1. In reading and arithmetic, majority of children fell below level of achievement expected on basis of chronological age 2. In using mental ages as basis for determining achievement level, majority fell below expected level in both reading and arithmetic 3. Emotionally disturbed children lower in arithmetic scores than reading scores (significantly) 4. In actual grade placement, larger proportion were in grades below that expected on basis of CA

TABLE 1

Academic Characteristics Studies of the Behaviorally Disordered

Authors	Subjects	Task	Results
Tamkin (1960)	Children receiving residential treatment for emotional disorders in psychiatric hospital; 22 boys, mean age 8.7 years; 12 girls, mean age 9.4 years; combined mean age 9.0 years	Wide Range Achievement Test (WRAT) arithmetic and reading parts	1. Both arithmetic and reading grade rating within range commensurate with mean CA of sample 2. Difference between grade ratings for reading and arithmetic was significant at .005 point based upon one-tailed test (t=2.91) 3. 32% (n=11) demonstrated some degree of educational disablility 41% (n=14) were educationally advanced, and remaining 27% (n=9) were at expected grade level - observing difference between CA and grade rating

and delinquency. They cited early studies by Sullivan (1927), Lane and Witty (1934), Hill (1935), and Bond and Fendrick (1936) who found that in general delinquents were deficient in reading achievement.

Tamkin (1960), whose subjects included 34 children receiving residential treatment for emotional disorders, reported both the arithmetic and reading grade rating to be within the range commensurate with the mean chronological age of the sample. Arithmetic achievement was significantly lower than reading. Data from the Wide Range Achievement Test (WRAT) showed that 32% demonstrated some degree of educational disability, 41% were educationally advanced, and the remaining 27% were at expected grade level.

Stone and Rowley (1964) tested 116 children referred for psychiatric services using the WRAT. The majority of children fell below the expected level of achievement in reading and arithmetic on the basis of both chronological and mental ages. These children also scored significantly lower in arithmetic than reading. In actual grade placement, a larger proportion were in grades below those expected on the basis of chronological age. Likewise, Reilly, Ross, and Bullock (1980) reported that academic performance was deficient in all areas with arithmetic scores consistently lower than reading. In addition, Reilly et al. (1980) reported that violent offenders had the lowest reading scores. In a related investigation, Bullock and Reilly (1979) reported lower achievement in all content areas on a similar sample of youthful offenders. Additionally, greatest achievement deficiencies were found for male, minority, and older subjects.

Graubard (1964) compared the performance of 21 children in a psychiatric residential treatment center. Using the Metropolitan Achievement Test and the Stanford Achievement Test, he reported severe reading and arithmetic disability by comparing mental age to expected reading and arithmetic achievement. No evidence supporting a significant difference between reading and arithmetic achievement was found.

Schroeder (1965) compared the WRAT scores of 106 students classified as having emotional problems (psychosomatic, aggressive, school difficulties, school phobia, or neurotic personalities). The mean scores were consistently lower in arithmetic than reading in all five categories. The school difficulties category included the lowest mean achievement level in arithmetic and reading. The highest grade equivalent composite mean was reported in the neurotic-psychotic category. Emotionally disturbed children were deficient at all age levels with respect to school achievement. Schroeder concluded that academic disabilities are concomitant with emotional disturbance and vice versa.

Glavin and Annesley (1966) administered the California Achievement Test to 90 normal boys and 130 behaviorally disturbed boys (who were further divided into conduct problem, withdrawn, and inadequacy-immaturity groups) in public school. Their findings showed that 81.5% of the behaviorally disordered group were underachieving in reading and 72.3% underachieving in arithmetic. Academic failure can be expected in a high proportion of delinquent or conduct disordered children according to the review of Silberberg and Silberberg (1971); Glavin and Annesley (1966) found no significant differences in performance between the conduct disordered and the withdrawn group.

Motto and Lathan (1966) found no significant difference in the uniformity of achievement in reading and arithmetic of 47 schoolage children from a state hospital. The children were below expectations based upon chronological and mental ages. However, they did find more pronounced retardation in males.

Forness, Bennett, and Tose (1983) found similar results comparing 92 children who had been inpatients at a neuropsychiatric institute. Both boys and girls scored below expected levels on the Peabody Individual Achievement Test, although 12-year-old boys were lowest in reading recognition and reading comprehension. In a similar investigation (Forness, Frankel, Caldon, & Carter, 1980), 34 hospitalized patients exhibited deficiencies in all academic areas, particularly math and spelling.

Fuller and Goh (1981) compared 38 learning disabled and 42 emotionally disturbed public school children. The Wide Range Achievement Test scores of the learning disabled children were lower than those of the emotionally disturbed children on reading, spelling, and math. This was not so, however, on the Minnesota Percepto-Diagnostic Test, although no statistical tests were computed on the results.

Harris and King (1982) compared academic achievement of children classified as having learning problems, behavior problems, learning and behavior problems, or "no problems". They studied scores of 242 public school children administered the Science Research Associates (SRA) Achievement Tests. Those children with learning problems scored lower than the children with no problems. Those with behavior problems did not differ from the no-problem category on the SRA subtests of Reading, Math, Science, and Use of Sources, but did differ from all groups on Language Arts and Social Studies. The learning and behavior problem group performed lower than all groups on the SRA.

Epstein and Cullinan (1983) also found that for 16 matched pairs (IQ, sex, chronological age, ethnicity) of learning disabled and behaviorally disordered public school students, the behaviorally disordered students scored significantly higher than the learning disabled students on all subjects except the general information subtest of the Peabody Individual Achievement Test (cf., Reilly, Ross, & Bullock, 1980) and the math subtest of the Wide Range Achievement Test. These researchers suggested that differential academic programing may be indicated for learning disabled and behaviorally disordered children.

In contrast, Scruggs and Mastropieri (1984) investigated the Stanford Achievement Test scores of 1480 primary grade special education students (619 learning disabled and 863 behaviorally disordered) in several different content areas. They concluded that the learning disabled and behaviorally disordered children were, in fact, very similar with respect to academic performance, with learning disabled children scoring slightly but consistently higher than behaviorally disordered children. No consistent reading-math discrepancy was noted in either population. Also found was the fact that the variability of behaviorally disordered student performance descriptively exceeded that of learning disabled students; thus, a wider range of academic achievement among behaviorally disordered students may be expected.

In contrast to the above studies, one investigation reported results which suggested that behaviorally disordered students do not exhibit academic deficiencies. Graubard (1971) examined the reading achievement and behavior checklist scores of 108 emotionally disturbed children and concluded, "all groups' reading commensurate with MA and several groups' reading commensurate with CA" (p. 757). Graubard added, however, that academic retardation in his sample was associated with severity of conduct disorders. Unfortunately, no data were offered to support these conclusions.

Spelling

Few studies in subjects other than reading and arithmetic have been conducted. Glavin and DeGirolamo (1966) found differences between withdrawn and conduct disordered students with respect to types of spelling errors. The withdrawn children made significantly more written spelling errors, while the conduct problem children made significantly more refusals (i.e., refused to complete the task). They concluded that children with emotional problems may show patterns of spelling errors which differ both quantitatively and qualitatively from those of normal children. In addition, as mentioned above, Fuller and Goh (1981) found that learning disabled students scored lower than emotionally disturbed students on tests of spelling achievement.

Psychosocial Functioning and Academic Performance

The present review of previous investigations can offer little evidence that the reported academic deficiencies of behaviorally disordered children are content specific; that is, research findings tend to support the notion that behaviorally disordered students are deficient in all areas of academic functioning, with some individual investigations reporting more serious deficits in math. Research which has examined academic performance in several different areas within one investigation has supported this conclusion (e.g., Scruggs & Mastropieri, 1984). However, several other researchers have investigated the interaction of academic performance and measures of psychosocial functioning. One major purpose of these investigations, described below, is to identify possible causal explanations for academic deficits.

Glueck and Glueck (1950) reported that delinquents exhibited more dislike for school subjects requiring strict logical reasoning and persistency of effort as well as those dependent upon efficient memory skills. This finding may partially explain some of the previous reports of differentially low performance in math. School achievement of the delinquent students was far below that of nondelinquents.

Graubard (1965) found that 35 delinquents incarcerated at a residential treatment center had similar communication patterns to those of nonadjudicated adolescents. The author maintained, however, that deficits were exhibited in the visual-motor channel (integration level). Delinquents also were reported to exhibit deficits in the Auditory Vocal Automatic modality and in directionality. Findings reported in this investigation, however, may be complicated by reliability and validity limitations of the measures administered (i.e., Illinois Test of Psycholinguistic Ability, Harris Test of Lateral Dominance).

Two investigations examined locus of control and academic achievement with behaviorally disordered students. Hisama (1976) compared 48 special education students with learning and behavior problems to 48 nonhandicapped students on a locus of control measure. It was hypothesized that externality may be a factor for low achievement motivation of behaviorally disordered and learning disabled children. Hisama reported that the Children's Locus of Control Scale showed no difference in scores between normals and learning disabled and behaviorally disordered students. It was concluded that the child with learning and behavior problems may not be more externally oriented than the normal child. Perna, Dunlap, and Dillard (1984) found in a similar study that of 63 males classified as mildly to moderately emotionally disturbed, those students who felt a high degree of self-responsibility for their successes and failures (internality) showed greater academic gains.

Letteri (1979) provided a "Cognitive Profile" associated with low academic achievement and severe behavior problems as a result of research efforts with 200 subjects (some behaviorally disordered, some not). The cognitive processes associated with low achievement were said to include: simple (vs. cognitive complexity), leveler (vs. sharpener), intolerant for ambiguous information, global or field dependent (vs. analytical way of perceiving), broad (vs. narrow inconclusiveness in breadth of categorization), nonfocuser, and impulsive (vs. reflective).

Four recent studies investigated attitudes and responses to achievement tests themselves. Scruggs, Mastropieri, Tolfa, and Jenkins (1985) examined attitudes expressed by behaviorally disordered students toward the test-taking experience. When surveys were administered at the beginning of the school year, reported attitudes of behaviorally disordered and more average students were very similar. When administered immediately after 3 days of testing, however, behaviorally disordered students reported more negative attitudes than their regular class counterparts. Taking a different perspective, Forness and Dvorak (1982) examined the general question of academic performance of disturbed or behaviorally disordered students under different testing conditions. The Comprehensive Test of Basic Skills under untimed conditions was used to test 40 adolescents who had been inpatients at a neuropsychiatric institute. Their scores were compared with scores obtained at the end of the normal time limits of the test. The only performance to increase under untimed conditions was that of reading comprehension. Similarly, Scruggs and Mastropieri (in press) trained a sample of mildly handicapped students, mostly behaviorally disordered, on test-taking skills and reported a significant performance advantage on reading subtests. This finding suggests that behaviorally disordered students may be deficient with respect to test-taking skills. In a more recent study, Scruggs, Mastropieri, and Tolfa (1985) reported that test-taking skills training of behaviorally disordered students had differentially raised scores on a "math concepts" subtest over those of learning disabled students to the extent that trained behaviorally disordered students gained 16 percentile points over their untrained counterparts. This finding may help explain why behaviorally disordered students' achievement scores in math are often differentially low.

CONCLUSIONS

The investigations reviewed in this paper represent a wide range of populations, all considered in some way *behaviorally disordered*. Different assessment measures have been used in a wide variety of different settings. In spite of the diversity of methods, measures, and population samples, however, some broad conclusions can be drawn and are given below.

First, behaviorally disordered students consistently have been seen to exhibit academic and intellectual deficiencies. Although several investigations have examined the possibility of specific content area deficiencies, all evidence to date indicates that academic deficiencies exhibited by this population are global, with a smaller set of investigators suggesting arithmetic performance may be relatively lower than reading. In addition, deficiencies in academic areas have typically been greater than intellectual deficiencies. Investigators who examined ability/performance discrepancies in behaviorally disordered children have indicated that academic achievement is generally below levels predicted by ability tests. These consistent results suggest that the need for academic remediation in this population is as great as the need for behavior management and social skills training.

Whether the reported academic deficiencies of behaviorally disordered students are greater than those typically exhibited by learning disabled students is less certain. Fuller and Goh (1981) and Epstein and Cullinan (1983) reported that learning disabled students scored lower on achievement measures, while Scruggs and Mastropieri (1984) reported that learning disabled students scored consistently higher. In spite of these discrepant findings, however, substantial academic deficiencies have been reported in both populations. In addition, behaviorally disabled students have exhibited consistently higher variability, due no doubt to the fact that learning disabled students are operating under an academic "cut off" level, while behaviorally disordered students are not.

In addition, several variables have been identified which may partially explain observed academic deficiencies. These potentially related variables include attitude toward school subjects (Silberberg & Silberberg, 1971), external locus of control (Hisama, 1976; Perna, Dunlap, & Dillard, 1984), impulsivity (Letteri, 1979), and responses to test-taking situations (Forness & Dvorak, 1982; Scruggs & Mastropieri, in press; Scruggs, Mastropieri, & Tolfa, 1985; Scruggs, Mastropieri, Tolfa, & Jenkins, 1985). Many of these investigations simply describe characteristics of this population, however, and do not provide information that these variables are, in fact, causally related. Further research is needed to document more carefully the reasons for the observed academic deficiencies.

Finally, it must be noted that research concerned with optimal instructional strategies for this population has been greatly neglected, given the nature and extent of the problem. Epstein, Cullinan, and Rose (1980) referred to academic remediation of behaviorally disordered students as an area "of great concern to special education practitioners, but, ironically, of less concern to researchers" (p. 64). They described the several investigations which had been conducted, virtually all of which examined the role of token reinforcement in increasing academic performance. Although some initial research has been conducted which appears promising in evaluating the effect of such other instructional variables as corrective feedback (e.g., Polsgrove, Reith, Friend, & Cohen, 1980), increased instructional time (e.g., Reith, Polsgrove, Semmel, & Cohen, 1980), self-management (e.g., Cohen, Polsgrove, & Reith, 1980), peer tutoring (Scruggs, Mastropieri, & Richter, 1985), and cooperative versus competitive learning (Scruggs & Mastropieri, 1985), further research is needed to refine these variables and to identify other variables effective in remediating the serious academic deficits of this population.

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Effects of Human Potential Seminars on the Socially Adaptive Behavior of Incarcerated Juvenile Delinquents

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ABSTRACT

A pretest-posttest control group design was employed to assess the efficacy of a social learning procedure in developing socially adaptive attitudes and behaviors of a population of incarcerated male juvenile delinquents. The experimental manipulation consisted of a series of structured group exercises designed to increase self-affirmation, self-motivation, and empathetic regard for others. The use of the social learning procedure indicates favorable changes in self-concept and a strengthening of the bond between the delinquent and conventional society. In addition, the findings suggest that the social learning procedure had a significant effect on the institutional behavior of experimental group subjects, yet the significance of this effect disappeared when compared to control group behavior. Advantages of use of the procedure are discussed.

While it is assumed that behavioral disorders are unquestionably linked to the etiology of juvenile delinquency, correctional education programs designed to develop socially adaptive behaviors have received little attention. In fact, a limited number of empirically-based techniques for effectively managing and teaching socially adaptive behavior within the correctional classroom have been reported in the literature.

When such programs are found, they are traditionally structured in one of three ways. First, prerelease programs frequently provide opportunities for social education and experiences (Roberts, 1971). Some evidence suggests that educational counseling and "life-skills" training opportunities serve as significant bridges between the correctional environment and the realities of society (Arnette, 1967; Betz, 1973; Cohen, 1968; Dell'Apa, Adams, Jorgenson, & Sigurdsen, 1977; Larson, 1970; McKee & Zachert, 1966; Nicholson, 1970; Saranson, 1968; Shelton, 1980). A second approach can be noted in a moderate number of academic programs that are usually mounted by universities or community colleges to alter the social behavior of incarcerated offenders (Panton & Brisson, 1972; Partett, 1974; Partett & Ayer, 1971; Wotkiewicz & Minor, 1972). The third approach is evidenced by those social education programs that are developed by organizations external to corrections. Two examples of this approach are the *Guide to Better Living* series sponsored by the Stone-Brandel Foundation and the *Human Potential Seminar* (HPS) developed by McHolland (1976).

The research described here is an outgrowth of an interest in HPS and its application to an incarcerated delinquent population. The techniques of HPS are derived from social learning theory. By the process of social learning I mean communication in a group, motivated by some inner need or stress, leading to overt or covert expression of feeling, and involving cognitive processes which lead to insight and ultimately to behavior change. The opportunity for such experiences is generally enhanced by the intervention of a catalyst — or a facilitator — whose role is to help the student proceed along the road to social adaptation, but leaves the actual process of day-to-day problem solving to the student.

This investigation will explore the implications of social learning theory dealing with the process of observational learning. It will also demonstrate a concern with criminological evidence relating to the behavior of crime and delinquency. The basic proposition under test is that institutionalized delinquent males become more socially adaptive, in terms of both attitude and behavior, as a function of social learning processes.

METHOD

Subjects

The research was conducted at the Catalina Mountain School in Tucson, Arizona. This institution receives delinquent boys committed by Juvenile Court judges to the State's Department of Corrections. The length of stay is approximately 6 months. The subjects were 70 male offenders who, at admission, were between 15-½ and 18 years of age (mean = 17 years, 3 months). The average IQ estimated from the Culture Fair Intelligence Test was 103.4. Subjects were comparable in age, IQ, diagnostic classification made by the Corrections Department, and type and severity of delinquent behavior prior to incarceration.

There were 35 subjects assigned to both the treatment and control groups. Assignment of subjects to conditions was random. Subjects in the treatment group experienced an involvement in HPS for a period of 45 hours over 3 consecutive weeks of training. Subjects in the control group experienced only the normal program offered by a well-staffed institution with a relatively high resident-staff ratio. This program consisted of academic offerings in a variety of subjects as well as vocational training, on-the-job training, recreation, psychological counseling, and religious services. Each control group subject was expected to spend a minimum of 20 hours per week in an academic setting, 20 hours per week in either a vocational training or on-the-job training activity, and 7 to 10 hours per week in a structured recreational activity. Each experimental subject was expected to spend 15 hours per week in HPS, 5 hours per week in *either* an academic setting or a vocational training or on-the-job training activity, and 7 to 10 hours per week in a structured recreational activity. Participation in psychological counseling was determined by staff referral for both groups and religious services were offered only on a voluntary basis for all subjects.

Materials

Three kinds of data were gathered: (a) the self-concept measure, (b) the social control measure, and (c) the institutional behavior measure.

The self-concept measure. The notion that a positive self-concept is inversely related to the incidence of juvenile delinquency has laid claim to a consensual validity among U.S. criminologists (Hirschi, 1969; Matza, 1964; Reckless, 1967). An example of this view is represented by the work of Reckless and Dinitz (1972) who contend that "the person who conceives of himself as operating within limits is apt to hold himself within limits" (p. 158). In the present study, the test of the inmate's sense of self-concept was measured in terms of self-affirmation, self-motivation, and empathetic regard for others. Employed were

20 forced-choice items containing descriptions of favorable and unfavorable personal charactreristics rated on a 5-point Likert-type scale from *strongly agree* to *strongly disagree*. Illustrative items are:

1. I enjoy life.
2. I don't know what my values are.
3. I don't know what motivates me.
4. People bug me.

The social control measure. The concept of social *control* has been widely used in American criminology to develop theories of juvenile delinquency. The most influential use of this concept can be traced to the early theories of Clifford Shaw (1929) and Edwin Sutherland (1939). Shaw (1929) wrote:

> Under the pressure of the disintegrative forces which act when business and industry invade a community, the community thus involved ceases to function effectively as a means of social control. Traditional norms and standards of the conventional community weaken and disappear. Resistance on the part of the community to delinquent and criminal behavior is low, and such behavior is tolerated and may even become accepted and approved. (pp. 204-205)

More recent scholarship has shifted the focus away from the study of these *community* references to social control and toward the study of the strength of an *individual's bond* to conventional institutions, goals, and values in an effort to explain delinquency from a social control perspective (Briar & Piliavin, 1965; Hirschi, 1969; Matza, 1964; Reiss, 1951; Sykes & Matza, 1957). One of the most prominent control theorists, Hirschi (1969), has differentiated three dimensions of the "social bond" between youths and conventional society that act as a barrier to delinquency. Hirschi's theory of social control and delinquency conceives this bond in terms of attachments (caring about others), commitments (time, energy, and self invested in conventional behavior), and beliefs (attribution of moral validity to conventional norms). For Hirschi, these elements are associated with the propensity of an individual to engage in delinquent behavior.

As a measure of these elements, an abbreviated version of the High School Questionnaire (Hirschi, 1969) was included in the present battery of tests. This scale is a 20-item, forced-choice measure which contains descriptions of favorable and unfavorable personal characteristics associated with commitments to, attachments to, and beliefs in others. Inmates were asked to respond to statements such as the following:

1. I care what my teachers think of me.
2. Going to school is making me a better person.
3. I enjoy doing things with my parents.
4. I have a lot of respect for the police in my town.
5. The sucker who leaves his keys in his car is as much to blame for its theft as the man who steals it.
6. It's okay to break the law if you can get away with it.

The tests of self-concept and social control used here cover a broad range of attitudes and behaviors (e.g., making friends, occupational success, school achievement, respect for the law); hence they become a measure of the individual's generalized expectancies for socially adaptive behavior.

The institutional behavior measure. One would like to have measures that reflect the inmate's actual learning of socially adaptive behaviors that count in a correctional institution, and on the outside. But since these are notoriously elusive criteria measures, an alternative procedure was adopted. Institutional case files were reviewed to determine the number of times subjects had been sent from a treatment to a more primitive lockup cottage for disciplinary action. The time-at-risk factor was controlled for by dividing the number of lockup actions by the number of months of pre- and posttreatment incarceration for each subject. Lockup measures therefore yielded a freqency distribution of disciplinary actions for all subjects.

Design and Procedure

Measures of self-concept, social control, and institutional behavior for experimental and control groups were made on a pre-and posttest basis (Campbell & Stanley, 1963). The interval between pre- and posttesting was approximately 4 weeks.

The test of self-concept (called the Self-Evaluation Inventory) was designed by McHolland (1976). This test has been used to assess the effectiveness of HPS in studies of college students (Kleeman, 1972) and elementary school teachers (Kirby, 1974). The test of social control (the High School Questionnaire) was designed by Hirschi (1969) to test the dimensions of his social bond (i.e., attachments, commitments, and beliefs), and has been used to measure the effects of specific social control mechanisms on acts of self-reported delinquency (Hindelang, 1973; Hirschi, 1969; Jensen, Erickson, & Gibbs, 1978).

Two major design limitations can be noted in this study. First, no follow-up effort was made to determine the extent of transfer of effects of the experimental treatment to the outside. Therefore, inferences made from data that are derived from the use of the research instruments can only be made within the correctional environment itself. Second, a review of the literature suggests that the present study represents the initial reporting on the use of these instruments within a correctional environment. Consequently, we cannot norm the data to determine how this group placed with other incarcerated deliquents.

In the study, each seminar was attended by 6 to 10 inmates and two correctional educators who acted as leaders. Both teachers had received 20 hours of training on the use of HPS by a certified HPS instructor. Each seminar session had a particular theme such as personal goal setting, recall, focusing on "little peaks" in life, satisfaction, achievement and success, and finding out about individual motivation. Emphasis was placed on the integration of thinking and feeling about and doing for oneself and others and the potential usefulness of such activities in different interpersonal situations.

One of the teachers began each seminar session by introducing and describing the topic to be discussed that day. The introduction oriented the inmates to the topic for the day and provided a rationale for each particular exercise. After the students had been briefed concerning points to which they should pay special attention, the teachers would ask participants to take turns reading aloud from an HPS text and then take part in the "sharing" exercises that followed. Following the exercise, one student was called upon to summarize and explain the content and outcome of what had just been experienced by the class. Each session ended with a summary of the discussions, their most salient aspects, and their generalizability.

Comments and questions by the teachers were focused on sustaining the class' interest in and attention to the topics being discussed. Remarks made by the teachers were open and related to their own experiences with the topics at issue. The teachers attempted to get the students to think about related and similar situations in which the content of their topics read or discussed could be applied to their lives. An example is provided by the "Helpers" and "Killers" exercise in which the inmates identified a goal to achieve outside of the seminar, and were asked to report on the confidence and enthusiasm they felt as they actively pursued their goals. A different topic or situation was discussed for each of the 15 3-hour sessions. During the final session, subjects were asked to focus on their role in creating a better life for themselves through their attitudes, thoughts, and decisions realized during the seminar.

RESULTS

The experimental and control groups were comparable across all premeasures. The data in Table 1 indicates that significant positive changes were found from pre- to posttesting for 13 of the 20 repeated measures taken on the Self-Evaluation Inventory for the experimental group (*F* [1 & 68] = 95.77; $p < .001$). Also, significant positive changes were found from pre- to posttesting for 9 of the 20 repeated measures on the High School Questionnaire for the experimental group (*F* [1 & 68] = 20.43; $p < .001$).

Analysis of variance suggested that the experimental subjects showed significant favorable changes in their self-affirmations, self-motivations, regard for others, and for their commitments and beliefs about school and delinquency (Table 1). The difference between pre- and posttesting for the attachment to parents measure was not significant for either group. It was also determined that significant improvements were made in the institutional behavior of experimental group subjects (*F* [1 & 68] = 15.77; $p < .001$).

Comparisons of change between groups revealed a significant difference in terms of only one of the three full-scale measures. Experimental subjects showed an increase on the Self-Evaluation Inventory that was significantly greater than that for the other subjects (*F* [1 & 68] = 55.08; $p < .001$). The experimental group also showed both a greater positive increase in their commitment to school on the High School Questionnaire than did the controls (*F* [1 & 347] = 11.11; $p < .01$), and a greater shift away from a belief in delinquency than did the control group subjects (*F* [1 & 556] = 7.63; $p < .01$). The difference in change noted between the experimental and control groups on the measure of attachment to parents was not significant (*F* [1 & 342] = .54; *p* .53); nor was the between group measure of institution lockup actions (*F* [1 & 68] = 3.05; *p* .08). Chi-square analysis further suggests that the proporations of experimental subjects who continued to show positive behavior did not differ significantly from control group subjects (χ^2 [2, *N* = 70] = 4.26; *p*.11).

DISCUSSION

The purpose of the present analysis was to study the proposition that institutionalized delinquent males become more socially adaptive, in terms of both attitude and behavior, as a function of social learning processes. Attitudes relating to the delinquent's self-concept and social bond and the delinquent's institutional behavior were examined. The data suggest that the Human Potential Seminar had a greater effect on the attitudes and behaviors of adolescent delinquents than did the normal program of a high quality correctional institution. There was a significant difference between pre- and posttesting for the

TABLE 1

Comparison of Experimental and Control Groups in Terms of Dependent Variable Measures Assessed by Means of Subjects F-Ratio

Variable	Experimental Group (n=35)					Control Group (n=35)				
	Pretest		Posttest			Pretest		Posttest		
	$\overline{X}$	SD	$\overline{X}$	SD	F	$\overline{X}$	SD	$\overline{X}$	SD	F
Self-Evaluation Inventory										
Self Affirmation	26.00	4.70	36.94	3.35	122.86**	27.11	3.42	25.60	6.74	1.40
Self Motivation	16.28	4.45	25.20	5.55	54.82**	18.05	3.35	18.74	6.27	.32
Empathetic Regard	8.20	3.41	10.31	1.89	10.28*	7.00	1.18	7.17	1.24	.34
Full Scale	50.48	9.43	72.45	7.23	95.77**	52.00	5.54	51.77	12.36	.01
High School Questionnaire										
Attachment to Parents	14.91	4.36	13.54	4.59	1.63	12.02	4.78	13.60	5.10	1.76
Commitment to School	11.14	2.91	16.51	2.33	72.58**	14.97	3.18	14.88	2.20	.01
Beliefs in Delinquency	20.40	3.91	25.80	5.15	29.77**	17.82	4.51	18.65	4.65	.57
Full Scale	46.45	8.31	55.85	9.24	20.43**	50.68	10.05	54.91	9.63	3.22
Institutional Behavior										
Lock Up Actions	1.28	.98	.48	.65	15.77**	.74	.98	.88	1.30	.24

*p 01
**p 001

experimental group in terms of self-concept, commitment to school, and beliefs about delinquency. There was also a significant posttest difference between the experimental and control groups in terms of self-concept. A third outcome of this analysis was the significant improvement noted in the institutional behavior of experimental group subjects, yet this variance disappeared when studied against control group behaviors. Informal comments by the subjects suggested that they were impressed with and responded favorably to the well-ordered, informational, and no-nonsense approach of the experimental treatment. In the main, these findings support those conclusions drawn from the limited number of previous investigations that have evaluated the efficacy of social learning procedures in a correctional setting (Saranson, 1968; Shelton, 1980).

While the present results suggest the hypothesis that institutionalized delinquent males become more socially adaptive as a function of a social learning opportunity, one major design and execution problem remains. Could the development of socially adaptive behavior have resulted from the fact that the Seminar group experienced more intensive relationships with their peers and teachers, and that the insights gained through the use of the HPS technique were secondary to the simple involvement in a group process? This is to suggest that what really may be at work here is that experimental subjects found in the Seminar a principle of human interaction that added to the order, serenity, and sense of purpose in their lives; and that that purpose was aided by the teacher and sustained by fellow subjects, Seminar related activities, and a sense of community. It would then follow that HPS could have been replaced by any one of a number of like endeavors designed to develop socially adaptive behavior (e.g., Guides to Better Living, Transcendental Meditation, the est Training) and similar results could have been achieved.

In this sense, there is nothing "special" about the use of HPS in a correctional setting. As other group processes that are intended to develop socially adaptive behavior, the HPS model features both intensive self-education by reading and group interactions which are designed to foster peer group cohesion. Yet there does exist two distinct advantages of the use of this procedure in a correctional education setting. First, it may be implemented by existing education and/or counseling staff after the staff members have completed the HPS leadership training program. Second, it may be flexibly accommodated into many ongoing instructional activities of the institution's prerelease program. As such, the procedure can provide correctional educators with an additional intervention to develop socially adaptive behavior.

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Hair Mineral Content as a Predictor of Childhood Autism

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ABSTRACT

Concentrations of 16 nutrient minerals and 7 toxic minerals were determined in scalp hair samples from a group of 28 autistic children and 18 children comprising a control group. Autistic children had significantly lower amounts of magnesium and calcium in their hair than did controls. On the basis of a stepwise discriminant function of the 23 minerals, 85% of the autistic children were correctly classified with magnesium levels accounting for 18% of the variance between the two groups. Possible relationships between magnesium deficiency and early childhood autism are discussed.

The etiology of early childhood autism is largely unknown and controversial. The controversy surrounding the etiology of infantile autism centers around psychogenic theories and biological theories, including biochemical, deficit, viral, and genetic approaches. One biochemical approach is that abnormal mineral metabolism may be involved, since abnormal mineral metabolism can cause a variety of psychiatric disorders ranging from mild behavioral disturbances to schizophrenic like psychosis (Pfeiffer, 1975; Underwood, 1977).

Minerals comprise 5% of the molecular composition of our bodies and serve a wide range of functions. They may be crucial for the functioning of the central nervous system, or may be unwanted and toxic. Additionally, there are many minerals of hypothesized yet undemonstrated value or detriment. Scalp hair has been proposed as a convenient sampling tissue for evaluating an individual's burden of certain minerals (Passwater & Cranton, 1983) and was used in this study. The purpose of this study was twofold: (a) to determine if concentrations of certain minerals in the hair of autistic children were different from their nonautistic siblings, and (b) to determine the relative importance of each mineral to the discriminiation of the two groups.

METHOD

Subjects

Parent members of the National Society for Autistic Children in Colorado and Montana were contacted and asked to submit hair samples from their autistic child and a nonautistic sibling for trace mineral analysis. Parents without a nonautistic child were asked to submit a hair sample from a same-sex, same-age child in their neighborhood. Of those contacted 28 parents consented to provide the samples resulting in a subject population of 28 autistic children and 18 children representing a control group (14 siblings, 4 neighborhood children). All of the autistic children were classified as autistic using the definition of the National Society for Autistic Children (Ritvo & Freeman, 1977). The mean age of the autistic children was 8.85 ± 4.06, and the mean age of the controls was

10.83 ± 4.55 (p = *NS*). There were 24 males in the autistic group compared to 10 males in the control group ($p < .05$).

All 46 subjects were Caucasian and from middle-class urban families. Of the 28 autistic children, 19 were reported to be on psychotropic medicines. Medications included phenothiazines, butyrophenones, anti-Parkinson drugs, and antiepileptic drugs.

Classification of Hair Mineral Levels

Every part of the human body contains at least a few atoms of every stable element in the periodic table. Although a large number of these elements are found in detectable amounts in human tissue, blood, and urine, hair in particular contains a higher concentration of many of these elements. Trace elements are accumulated in hair at concentrations that are generally higher than those present in blood serum, provide a continuous record of nutrient-mineral status and exposure to toxic minerals, and may serve as a probe of physiologic functions (Passwater & Cranton, 1983). Scalp hair has several characteristics of an ideal tissue for epidemiologic study — it is painlessly removed, normally discarded, easily collected, and its contents can be easily analyzed.

Parents received verbal and written instructions on the hair collection procedure. Hair samples (about 400 mg) were collected from the napes of the children's necks, as close to the scalp as possible. The hair samples were then submitted to Doctor's Data, Inc., a state and Center for Disease Control licensed laboratory in West Chicago, where they were analyzed with three instruments (the atomic absorption spectrophotometer, the graphite furnace, and the induction coupled plasma torch) to determine 7 toxic mineral levels and 16 nutrient mineral levels. The 7 toxic mineral levels tested for were lead, arsenic, mercury, cadmium, aluminium, nickel, and beryllium; the 16 nutrient mineral levels tested were calcium, magnesium, sodium, potassium, copper, zinc, iron, manganese, chromium, phosphorous, selenium, molybdenum, silicon, lithium, cobalt, and vanadium.

Laboratory techniques used to assure the reliability of results and to meet reproducibility requirements included:

1. A blind sample was run from the initial steps through the entire procedure to assure reproducibility of methods.
2. At least one of every three tests was a standard. Working standards were made to assure proper values.
3. The in-house pool was completely remade and analyzed monthly to eliminate the possibility of precipitating elements and to assure reproducibility.
4. Temperature and humidity were controlled to assure reliability and consistency of the testing instruments.
5. The hair samples were weighed to the thousandths of a gram (.001 g is equal to approximately 4 hairs, 1 inch [0.254 m] long); and only volumetric flasks, the most accurate available, were used to diluting the ashed sample.
6. Lot-number control sheets for all reagents were used to assure uniformity, and records were kept and available for inspection.
7. All glassware was acid washed in-house before use and between each use, including acid prewashed disposable test tubes.
8. The water used was virtually mineral free, rated at 18+ MEG. And
9. Upon receipt, the hair sample was washed thoroughly with deionized

water, a non-ionic detergent, and an organic solvent to remove topical contaminants.

Reports summarizing the significant findings of the hair analysis for each subject were received from Doctor's Data, Inc. Findings consisted of two main sections. The first summarized the significant findings related to the 16 nutrient-mineral levels. These findings were based on a statistical comparison of the levels determined in the present analysis with those observed in a normal population. The second dealt with the 7 toxic minerals. If the mineral analysis indicated any of these elements to be above generally accepted upper limits, the name of this element was printed on the report and supplemental information was enclosed with the report. In addition, this section of the report listed both the observed hair level and suggested upper limit for each toxic mineral and plotted each level in relation to the upper limit.

RESULTS

The two groups of children were compared for hair mineral concentrations. As shown in Table 1, the mean hair concentrations of magnesium and calcium of the autistic group were considerably below those of the control children, while the autistic group's mean hair phosphorous level was considerably above that of the controls. The data were analyzied with the t test for two independent samples designed of SPSS (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975), yielding significant t values for magnesium (t = -3.06, 44, $p < .01$), calcium (t = -3.02, 44, $p < .01$) and phosphorous (t = -2.22, 44, $p < .05$). The results of the t tests on the other nutrient and toxic elements were nonsignificant.

Also, as shown in Table 1, the autistic group's mean hair magnesium and calcium levels were below the theoretical normal range (± SD) established by Doctor's Data, Inc. (1983). The autistic group evidenced mean hair magnesium and calcium levels of 20.64 ± 12.04 and 230.82 ± 216.60 parts per million (ppm) compared to the normal ranges of 36-142 ppm and 343-780 ppm, respectively. The autistic group's mean hair phosphorous level was within the normal range. The autistic group's mean hair silicon level was above the normal range, but this was due to a large standard deviation with two autistic children evidencing extremely high hair silicon levels.

A discriminant analysis was then performed using a program from SPSS (Nie & Hull, 1979). The stepwise method using Wilks Lambda was employed to ascertain the relative contributions of the 23 minerals to the separation of groups.

The combination of magnesium and selenium in order of entry into the discriminant function significantly separated the autistic and control children ($F2, 44 = 6.54$, $p < .01$). Both magnesium and selenium contributed uniquely over and above the previously entered minerals to the discrimination between groups (F = 9.31, 3.26, respectively). The standardized canonical discriminant function coefficients revealed that magnesium (.87) was more important than selenium (-.55) to the discrimination between groups.

Stepwise discriminant analysis revealed that magnesium accounted for 18% of the variance of the two groups, and selenium accounted for an additional 6%. Overall, the two minerals accounted for about 24% of the variance of the two groups. On the basis of the discriminant function 85.7% of the autistic children and 50% of the control children were correctly classified. These percentages are optimistic, however, since the function was applied to the data that produced it. A cross validation of the discriminant function is expected to result in somewhat smaller percentages.

DISCUSSION

The value of the present study is that it presents the baseline concentrations of some nutrient and toxic minerals in the hair of autistic children. The literature on the subject contains a lack of data for direct comparison.

The most noteworthy finding of the present study was the decreased levels of hair magnesium in the autistic children in comparison to controls and laboratory norms. Given these results, there are a variety of possible theories regarding magnesium's relationship to early childhood autism that deserve consideration.

First, magnesium is essential to the body's utilization of vitamin B-6, and numerous recent studies have demonstrated that autistic children show marked improvement when given a large daily supplement of vitamin B-6 and

TABLE 1

Results of Trace Mineral Analysis Mean ± S.D.

Trace Mineral	Autistic Group (ppm)		Control Group (ppm)		Normal Range^a (ppm)
Lead	6.28±	2.12	6.66±	2.49	15.00^b
Arsenic	3.55±	1.13	3.87±	0.69	7.00^b
Mercury	0.88±	0.37	0.96±	0.49	2.50^b
Cadmium	0.60±	0.62	0.51±	0.28	1.00^b
Aluminum	11.03±	8.12	13.00±	7.75	30.00^b
Nickel	1.25±	0.62	1.54±	1.18	2.20^b
Beryllium	0.03±	0.02	0.03±	0.01	0.10^b
Calcium	230.82±	216.60**	958.83±	1253.69	343.00 - 780.00
Magnesium	20.64±	12.04**	67.11±	79.49	36.00 - 142.00
Sodium	50.92±	63.07	48.44±	68.53	19.00 - 123.00
Potassium	26.32±	26.09	20.77±	34.51	10.00 - 84.00
Copper	15.00±	15.76	26.00±	31.97	13.00 - 63.00
Zinc	131.35±	31.10	140.38±	28.38	123.00 - 172.00
Iron	14.92±	9.98	13.66±	7.23	7.68 - 23.00
Manganese	0.33±	0.26	0.50±	0.41	0.33 - 1.96
Chromium	0.78±	0.23	0.87±	0.28	0.63 - 1.10
Phosphorous	134.82±	27.17*	116.50±	27.61	102.00 - 178.00
Selenium	0.26±	0.34	0.11±	0.14	0.16 - 0.88
Molybdenum	1.24±	0.87	1.48±	0.81	0.25 - 1.65
Lithium	0.03±	0.03	0.04±	0.04	0.01 - 0.45
Silicon	14.21±	21.27	7.77±	1.16	5.14 - 10.00
Cobalt	0.23±	0.05	0.28±	0.15	0.13 - 0.35
Vanadium	0.17±	0.08	0.19±	0.12	0.16 - 0.21

[a] *Theoretical Normal Range* (±1 SD) established by Doctor's Data, Inc. (1983)

[b] Normally tolerated limit established by Doctor's Data, Inc. (1983)

*$p < .01$ by two tailed t test

**$p < .05$ by two tailed t test

magnesium (Martineau, Laffont, Bruneau, Roux, & LeLord, 1980; Rimland, Calloway, & Dreyfus, 1978). B-6 is a ubiquitous coenzyme and plays a role in the metabolism of numerous transmitters (Ebadi, 1972). A variety of genetic CNS diseases are responsive to pharmacological doses of B-6 (Rosenberg, 1974), and B-6 deficiency has been noted in some autistic children (Rimland, 1973). From a therapeutic perspective, B-6 is active in catecholamine decarboxylation (Swanson & Stahl, 1976) and it is therefore possible that the therapeutic effects of B-6 and magnesium are connected, at least in part, to modifications in the metabolism of dopamine. If dopaminergic systems are immature or abnormal in autism (DeMasio & Maurer, 1978), this could explain the effects of B-6 and magnesium on autistic children. Magnesium's essential role in the utilization of B-6 is also seen in Rimland's (1974) observation that some autistic children experienced increased irritability, sound sensitivity, and enuresis when B-6 was given in large amounts, but these problems promptly disappeared when increased amounts of magnesium were added to these children's dietary intake.

A second hypothesis is that magnesium deficiency in itself influences neurotransmitter metabolism (Alexander, van Kammen, & Bunney, 1979). Symptoms of magnesium deficiency include confusional states, increased neuromuscular irritability, hyperreflexia, and multifocal and generalized seizures (Fishman, 1965). In an even more speculative vein, Laskay (1985) reports positive responses in autistic children treated with lithium; and Pavlinac, Langer, Lenhard, and Deftos (1979) found that the administration of lithium resulted in increased serum magnesium, and suggested that the effects of lithium on mania may be mediated via change in magnesium.

A third hypothesis concerning hair magnesium deficiency relates to the fact that 8 of the autistic children were reported to be on antipsychotic drugs. Alexander et al. (1979) reported a significant decrease in both magnesium and calcium serum levels in patients during the administration of pimozide, an antipsychotic drug. Importantly, as magnesium and calcium serum levels decreased, extrapyrimidal symptoms induced by neuroleptic treatment increased.

The significantly increased hair phosphorous levels in the autistic group and hair selenium's contribution to the separation of the groups may represent nutritional peculiarities of the sample population. The autistic group's hair phosphorous and hair selenium levels were both within the range of laboratory norms.

There were no significant differences in the 7 toxic minerals of the two groups. Levels of lead in the hair have been correlated to the presence of lead in the blood (Chattopadhyay, Roberts, & Jervis, 1977) and two previous reports indicated elevated blood lead in autistic children (Campbell et al., 1980; Cohen, Johnson, & Caparulo, 1976). None of the autistic children evidenced elevated hair lead levels, and their average level was considerably below previously reported mean hair lead levels of 10.78 ppm for emotionally disturbed children (Marlowe, Stellern, Errera, & Beck, 1983), 14.10 ppm for mentally retarded children (Marlowe, Errera, & Jacobs, 1983), and 11.38 ppm for learning disabled children (Marlowe, Cossairt, Welch, & Errera, 1984).

Although functional toxicity from lead is determined primarily by quantity and duration of exposure, research has shown that nutritional and biological factors can potentiate, moderate, or even prevent lead poisoning (Venugopal &

Luckey, 1980). For example, deficiencies of calcium, magnesium, phosphorus, iron, zinc, or copper potentiates the toxicity of lead. In contrast, an excess dietary intake of these nutrients has been shown to be protective. In this study the autistic group was lower than controls in the protective nutrients of calcium, magnesium, copper, and zinc, and as such, at increased risk for lead-induced insult.

IMPLICATIONS

Knowledge regarding mineral elements and their effects on neurobehavioral functions has rarely been considered in the diagnosis and treatment of autism. Any significant change in this direction should be predicated on a much broader research base than presently exists. It remains true, however, that the limited knowledge available regarding the etiological role of mineral element patterns is most often not utilized.

Rimland and Larson (1983) summarized all available studies on the relationship between hair mineral patterns and various aspects of behavior. Although the paucity of studies on autism precluded the drawing of inferences, several tendencies emerged when looking at other behaviorally atypical groups. Child and adult schizophrenics tended to have low levels of zinc and manganese accompanied by high levels of lead, mercury, cadmium, copper, and iron. Behaviorally disordered youth tended to exhibit high lead and possibly high aluminum, mercury, chromium, and molybdenum along with deficiencies in cobalt and vanadium. Juvenile delinquents appeared to exhibit high lead, cadmium, and magnesium and possibly high copper, calcium, and aluminum, along with low potassium, manganese, and sodium.

A treatment approach based on nutritional factors should be two-fold. It involves (a) identifying and minimizing deleterious factors (e.g., environmental toxin contributions), and (b) identifying and maximizing positive factors (e.g., essential nutrients). Both deleterious and positive factors are potentially within the realm of control by parent, child, and health or educational professional working with the family.

The research suggests that evidence of environmental toxin contribution should be routinely assessed when children with learning and behavioral problems are evaluated. If the assessment is positive, efforts can be taken to reduce or eliminate the toxins from the body as well as to minimize contact with the environmental sources of the toxins. Removal or reduction of the body burden of lead can be accomplished through chelation therapy, conducted under the direction of a qualified physician, or to some extent through good nutritional practices. For example, vitamin C is a natural chelator of environmental toxins (Stone, 1972), and essential nutrient elements such as calcium, iron, and zinc are beneficial in controlling the absorption, distribution, and excretion rates of toxins.

Secondly, nutritional deficiencies and imbalances should be corrected and a diet rich in minerals and vitamins should be followed to promote optimal brain development. In some cases a daily supplement of minerals and vitamins such as contained in a multivitamin may be advisable to help insure a sufficient quantity of essential nutrients. This consideration especially applies to children undergoing stress due to their disability, disorganization in the home, or other conditions.

Finally, regardless of mineral elements' potential role in childhood autism, autistic children like all children can benefit from the promotion of optimal brain development. If nutritional and environmental intervention improves the functioning of the brain, then the general quality of life will be improved.

In summary, results of this study indicate that decreased hair magnesium levels contributed significantly to the separation of autistic children from their normal counterparts. In that there are a variety of possible explanations as to why this occurred, evidence is presented to encourage others to examine the relationships of hair minerals to early infantile autism.

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The Role of Pupil Gender in Teacher Perception of Disturbance Among Adolescents

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ABSTRACT

Previous research suggests that teacher perception of disturbed behavior among elementary schoolaged pupils may be affected by the sex of the pupil exhibiting the behavior. This study examines the degree to which secondary teachers are influenced by pupil gender in their response to disturbance. When presented with behavioral vignettes describing conduct disordered or anxiety-withdrawn behaviors, teachers were not influenced by the sex of the central figure. Implications are discussed in relation to the affect sociocultural changes have had upon teacher tolerance of disturbed behavior.

In recent years, proponents of an ecological model of disturbance have argued that the annoyance threshold of teachers directly affects whether a particular behavior will be considered normal or pathological (Algozzine, 1981; Swap, Prieto, & Harth, 1982). Research involving elementary schoolaged children suggests that the sex of the student exhibiting a behavior may directly influence teacher tolerance and perception of disturbance. For example, both Caplan (1977) and Gregory (1977) reported that boys were more likely to be referred to special education than girls in spite of identical behavior problems.

Available evidence suggests that a more complex bias may exist for elementary school children of either sex whose behavior deviates from traditional sex role stereotypes (i.e., withdrawn boy; aggressive girl). Schlosser and Algozzine (1979) reported that teachers found inappropriate sex role behavior among third grade boys and girls to be far more disturbing than appropriate sex role behavior. Similarly, Caplan (1977) showed that college undergraduates held greater concern for elementary schoolaged boys and girls exhibiting nontraditional sex-role behavior.

Whether these findings are applicable to teacher tolerance of behavior problems among boys and girls at the secondary level has not been determined. It is possible that changes in traditional socialization patterns and sex roles may have more impact on the behavior of adolescents than younger children. With growing evidence that behavior problems among adolescent girls have steadily increased in recent years (Duke, 1978; Duke & Duke, 1978; Jessor, 1982), secondary school teachers may be less apt to respond to a given behavior based upon the sex of the pupil than would elementary school teachers. However, evidence to support this assumption is scant.

The purpose of the present study was to determine the degree to which secondary teachers differentially tolerate disturbed behavior in relation to student gender. Since the term *behavioral disorders* has often appeared in the literature in place of or along with references to disturbed behavior, this study will use the terms interchangeably.

METHOD

Subjects

The subjects ($N = 128$) were secondary teachers enrolled in education courses at California State University, Los Angeles (CSULA); 64 of the subjects taught special education and 64 taught regular education classes. Each group of teachers was comprised of an equal number of males and females. All the regular education teachers who volunteered for this study were from 3 large classes for regular secondary teachers. Due to smaller class size, the special education teachers in the study were drawn from 10 special education classes within their department. The teaching experience among subjects ranged from 0 to 20 years, with all subjects either currently teaching full time or having had full-time experience within the last 3 years.

Instrument

Based upon Quay's (1979) identification of behavioral characteristics indicative of conduct disordered (CD) and anxiety-withdrawn (AW) behaviors, two vignettes were developed. Two forms of each vignette were created with a girl as the central figure on one and a boy as the central figure on the other. Subjects were presented two vignettes depicting boys as the central figure, or two vignettes depicting girls as the central figure (see Appendix for vignette format).

Following each vignette was a set of 25 statements each accompanied by a 6-point Likert Scale for subjects to indicate how strongly they agreed or disagreed with the corresponding statement. For data analysis, responses to these statements were broken down to assess how teachers perceived students according to:

1. Need for special assistance
2. Affect on the teacher him/herself
3. Affect on classmates
4. Future prognosis

Appendix B contains a breakdown of the statements within each of the preceeding dependent variables.

For the purposes of a pilot study, 30 graduate students with previous teaching experience were randomly selected to read the vignettes and respond to the statements. Univariate descriptive analysis and pairwise comparisons among items were carried out and indicated that responses among individual items were normally distributed. In addition, there was variability across items, whereby the full range of the Likert Scale was utilized.

Procedure

Arrangements were made for the experimenter to speak before various regular and special education classes at CSULA. Due to the smaller number of students enrolled within the Special Education Department, arrangements were made to visit far more special than regular education courses. All subjects participating in the study were given two behavioral vignettes along with a cover sheet asking them to indicate their sex, number of years of teaching experience, and type of experience (i.e., regular or special education).

STATISTICAL ANALYSIS

A split plot Analysis of Variance was run on each of the four dependent measures. In examining these results, it was taken into account that numerous researchers (Edwards, 1968; Keppel & Saufley, 1980; Kirk, 1982; Minium, 1978) have cautioned that the greater the number of tests on a set of data, the more likely are the chances of "falsely" detecting a significant effect (i.e., Type I error). In order to avoid this danger of a Type I error, it was necessary to establish a conservative alpha level as criterion for significance in this study.

Keppel (1982) suggested a formula for calculating the Type I familywise error rate (i.e., α_{fw}) which focuses on the "probability of making one or more Type I errors in the set of comparisons under scrutiny" (p. 145). This formula is expressed as $\alpha_{fw} = 1 - (1 - \alpha)^c$, where c represents the number of orthogonal comparisons that are conducted. In using this formula, it was found that in order to keep $p < .05$, the probability value for each of the statistical tests needed to be approximately $p < .0127$.

Final analysis of the data showed no significant results for any of the dependent measures. In essence, teachers were not affected by pupil sex when evaluating AW or CD behavior.

DISCUSSION

In the present study, teacher tolerance and perception of AW and CD behaviors were not affected by pupil gender. Previous studies of this nature which did find significant results tended to focus on behaviors manifested by preschool and elementary schoolaged children (Brophy & Everston, 1981; Brophy & Good, 1974). In this regard, it has also been found that girls are more likely to demonstrate behavior problems in adolescence than during elementary school years (Brophy & Everston, 1981; Simmons & Rosenberg, 1975). With familiarity of a wider range of behaviors among girls, secondary teachers may have been less inclined to discriminate according to pupil sex.

Sociocultural changes — as reflected in the women's movement and an accompanying trend towards sexual equality — may have also directly influenced teacher tolerance in this study. In regard to societal changes, Hoffman (1977) predicted several years ago that the tremendous increase in maternal employment would result in a diminishing of sex-linked differences in socialization and behavior.

Along with research indicating an overall dimunition of sex differences within society (Collins, Ingoldsby, & Dellman, 1984; Feely, 1982; McCandless & Coop, 1979), reports also suggest that both the quantity and quality of female delinquency and misbehavior are changing (Duke & Duke, 1978; Jessor, 1982). If indeed teachers are influenced by current sexual mores in responding to student behavior, one would expect that teacher tolerance towards nontraditional sex role behaviors would gradually broaden with corresponding changes in society.

Future research should continue to explore the effect of teacher tolerance toward individual characteristics of students. For example, it would be beneficial to ascertain whether teacher responses would vary on the same vignettes if the central figures also manifested differences in ethnicity, social class, and physical attractiveness. In addition, the question should also be asked whether the behaviors described in this study would be differentially tolerated by other significant people within a student's ecosystem (e.g., teacher aides, classmates, administrators).

APPENDIX A — Format of Vignettes

Conduct Disorder

Tom (Marie) is a nice looking 14-year-old boy (girl) with an IQ of 105. Since entering junior high school 2 years ago, Tom (Marie) has gained a reputation for his (her) defiant attitude toward teachers and authority figures. He (She) frequently disrupts classes by barging in late or interrupting teachers with smart and boisterous comments. On other occasions, he (she) has laughed and talked freely with other students in class despite teachers' requests that he (she) not do so. When confronted for his (her) behavior, Tom (Marie) generally either blows up at the teacher and denies any wrong-doing, or simply glares sullenly. In addition, Tom (Marie) has a history of threatening and teasing "weaker" students. Although his (her) academic performance has been adequate, a counselor recently characterized Tom (Marie) as having an "uncooperative and negative attitude toward school."

Anxiety-Withdrawal

Yvonne (Joseph) is an extremely shy and withdrawn 14-year-old girl (boy) who appears unduly tense and anxious. She (He) consciously avoids most social interaction and often reports to the school nurse to complain about various physical problems (e.g., sore throat, upset stomach, headache). Despite passing grades, Yvonne (Joseph) generally looks lonely, timid, and apprehensive in her (his) classes, and is usually reluctant to attempt anything new or different. Yvonne (Joseph) has no friends at school, and seems overly sensitive and self-conscious about the opinions of others. A school counselor noted that Yvonne's (Joseph's) feeling are easily hurt and she (he) is "noticeably uncomfortable in talking to teachers and classmates." When teased by peers, Yvonne (Joseph) is far more likely to cry or withdraw than stand up for herself (himself).

APPENDIX B — Statements for Dependent Variables

1. Student's need for special assistance:
   - A. Tom should remain in regular classes.
   - B. Tom's behavior is typical of students his age.
   - C. Tom is exhibiting disturbed behavior.
   - D. Tom is a sick person.
   - E. Tom should be referred to a psychiatrist.
   - F. Tom needs to be in a special education class.

2. Student's affect on teacher him/herself:
   - A. I would not want a student like Tom in my class.
   - B. Tom's behavior would be difficult to manage.
   - C. Tom would be an easy student to have in the classroom.
   - D. I would enjoy a pupil like Tom in my class.
   - E. Working with Tom would be no different than working with other students.

3. Student's affect on classmates:
   - A. A student like Tom would be popular among peers.
   - B. Pupils would enjoy being in class with Tom.
   - C. Classmates would be bothered by Tom's behavior.
   - D. Tom's behavior would disturb other students.
   - E. Tom would probably hinder the learning of classmates.
   - F. With Tom in their class, students would be disruptive.
   - G. Tom's presence in the classroom would have no special affect on other students.

4. Student's future prognosis:
   - A. It is unlikely that Tom will be able to hold down a job as an adult.
   - B. Tom will probably spend time in jail as an adult.
   - C. Tom will have behavioral and/or emotional problems throughout his life.
   - D. Tom will easily fit into society as an adult.
   - E. Tom will most likely complete high school.
   - F. Tom will probably outgrow his behavior difficulties by the time he is an adult.
   - G. Tom will probably spend time in a mental institution as an adult.

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